

BUTANE-PROPANE

HEADQUARTERS FOR LP-GAS
INFORMATION SINCE 1931

News



CENTRAL LIBRARY
RECEIVED
DEC 7 - 1950
LIBRARY
DEPARTMENT OF THE INTERIOR

WARREN

PETROLEUM CORPORATION

DECEMBER, 1950—50c per Copy

LIGHT WEIGHT



"STRENGTH"



"EASE OF HANDLING"

HERE'S WHY *You* PREFER HACKNEY CYLINDERS OVER 3 TO 1!

Yes, these are the things which you look for in a cylinder. That's according to a recent, completely impartial, nationwide survey among you LP-Gas distributors and dealers. And this survey shows you prefer HACKNEY CYLINDERS more than 3 to 1 over the next most popular cylinder—more than 2 to 1 over *all* other cylinders combined! That's because you know Hackney Cylinders give you more of what you expect in a cylinder.

You'll find those features you want in the complete line of Hackney Cylinders—from 420 lb. giants to small 5 lb. industrial type cylinders. Write for full details.



"CONSTRUCTIVE FEATURES"



"APPEARANCE"



"UNIFORMITY"



"REPUTATION OF MAKER"




PRESSED STEEL TANK COMPANY

Manufacturer of Hackney Products

1487 S. 66th St., Milwaukee 14 • 1399 Vanderbilt Concourse Bldg., New York 17
227 Hanna Bldg., Cleveland 15 • 936 W. Peachtree St. N. W., Room 112, Atlanta 3
208 S. La Salle St., Room 790, Chicago 4 • 552 Roosevelt Bldg., Los Angeles 14





*It's a cinch
to repair
this meter*

*A screwdriver
is all
you need!*

*You simply replace
the measuring unit*

**ROCKWELL-EMCO
NO. 00 LP-GAS METER**
with pressure cast aluminum
alloy case

When you install Rockwell-Emco meters you can forget about the repair problem. We've streamlined that for you. After lengthy service the complete measuring unit in these meters can be removed intact and replaced with either a new assembly or a factory repaired duplicate. The only tool required is a screw driver and anyone can make the switch in a few minutes time. We offer customers the choice of returning worn measuring units or complete meters to the factory for low cost repairs. Check our modest repair prices now and learn all about the many other advantages of using Rockwell-Emco LP-Gas meters on all your services. Write for bulletin 1163.



ROCKWELL MANUFACTURING COMPANY

Pittsburgh 8, Pa.



A JENKINS PUBLICATION

Letters	21
Comment	25
Beyond the Mains.....	Ed Titus 27
"Cookgas Time" Every Day.....	Grier Lowry 31
Why Poland Spring House Chooses Gas.....	Stephen A. Victor 38
"Dead File" Is Source of Pre-Christmas Sales.....	Gene Creighton 42
Performance Rating of Automatic Water Heaters.....	C. E. Bartlett 43
Distribution Will be Bottle Neck	E. W. Voice 51
Unity, Sincerity Determine Future.....	T. G. Tackett 57
Dealers Warned of Electric Tactics.....	Ed Titus 63
Associations	64
Calendar	70
Stock Tank Heaters.....	Sheldon Miller 74
War Time Controls	78
Service, Safety, Sales, Part 5.....	Keith Clevenger 84
Bottled Gas Ends Wood Chopping.....	Phil Glanzer 88
Making Collections Without Making Enemies.....	Ernest W. Fair 92
Power: 50,000 Watch Tractor Perform.....	98
Propane, Anhydrous Ammonia Valves Compared.....	114
Products	116
Make Clean Fight for Business.....	Zoe Johnson 122
Pipe Line Capacities in Cubic Feet.....	127
The Trade	132
Classified	150
Annual Editorial Index	152
Advertisers' Index	160

Publication Office

Los Angeles (4)—198 So. Alvarado St. Phone: DUnkirk 7-4337

Branch Offices

New York (18)—11 W. 42nd St. Joseph M. Dematthew, District Manager. Phone CH 4-1969.
Chicago (3)—1064 Peoples Gas Bldg. David Carmen, District Manager. Phone WAbash 2-2589.
Cleveland (22)—19718 Lanbury Ave. James K. Gillam, District Manager. Phone WY 1-2587.
Tulsa—P. O. Box 4055. Craig Espy, District Manager. Phones: Business—2-2414; Res.—7-9807.

Lynn C. Denny, Editor; Edward K. Titus, Eastern Editor; Lester L. Luxon, Technical Editor;
Ted Shields, News Editor; Barbara Hall, Editorial Assistant; O. D. Hall, Mid-Continent Editor;
Fred L. Dalton, Art Editor.

Jay Jenkins, President and Publisher; James E. Jenkins, Secretary-Treasurer; Paul Lady,
Advertising Manager; Robert C. Horton, Circulation Manager; Gene Masters, Research.

December, 1950

Volume 12

Number 12

BUTANE-PROPANE News is published monthly. Copyright 1950 by Jenkins Publications, Inc., at 198 So. Alvarado St., Los Angeles 4, California. Subscription price: United States and U. S. Possessions, Canada, Mexico, Cuba, South and Central American Countries (in advance), 50c per copy, one year \$2.00; two years, \$3.50; three years, \$5.00. All other countries \$3.00 per year. By air mail \$8 per year, in U. S. only. Entered as second-class matter May 29, 1939, at the post office at Los Angeles, California, under the Act of March 8, 1879. Member of Audit Bureau of Circulation, Controlled Circulation Audit, Liquefied Petroleum Gas Assn., National Butane-Propane Assn., Society of Business Magazine Editors.

Publishers: G A S, The Magazine of the Gas Utility Industry; HANDBOOK BUTANE-PROPANE GASES; THE BOTTLED GAS MANUAL; Annual BUTANE-PROPANE News CATALOG; B-P News BULK PLANT DIRECTORY; WESTERN METALS.

Letters

Gentlemen:

From time to time in carburetion work we see the place where flexible high pressure gas lines would work very well.

Are such flexible lines made? I don't believe I have ever seen any offered for sale.

D.S.

Iowa

According to Page 42 of NBFU Pamphlet 58 issued in March 1949, "All piping from fuel container to first-stage regulator shall be standard copper or brass pipe or approved, seamless drawn non-ferrous tubing. Approved flexible connections may be used between container and regulator or between regulator and gas air mixer within limits of approval by any of the authorities listed in B.2 (a)." (This is on Page 3.)

In addition to whatever Pamphlet 58 may have, you must also consider any state regulations that exist in Iowa.—Ed.

Gentlemen:

We plan to line a brick chimney with an aluminum liner to take care of an LP-Gas furnace venting into the chimney. Also, venting into the same chimney is a coal range. Will the heat from a coal and wood fire be too high for the aluminum liner to withstand?

J.M.

Montana

The aluminum liner would not prove entirely satisfactory with a wood and coal range venting into it also. The melting point of aluminum is about 1110°F, which we feel is too low to provide adequate safety, especially

where the range flue enters the chimney and there is a possibility of direct impingement of flame.—Ed.

Gentlemen:

Would propane at 12 cents per gallon be economical enough for farm heating—bulk storage 500-gal. tank to be used? And compare to 60-cent natural gas, or \$15 coal a ton, 13-cent oil a gallon.

M.B.

Ohio

In order to compare the fuel prices, they must be placed on a common basis, and an allowance must be made for the efficiency with which the fuels are burned.

For this reason, the quantity, 1,000,000 Btu, has been selected as the basis for comparison. This is the heat, approximately, which is stored in 1000 cubic feet of natural gas, 11 gallons of propane, and 7½ gallons of stove oil.

Also, the word "coal" covers a broad subject—some coals are clean and of high quality; others are less desirable as they contain quantities of moisture, and ash, which range from 5% to 25% of each.

Therefore, three qualities of coal were selected for analysis: high grade, for which a heating value of 13,000 Btu per pound was used; medium grade, for which a heating value of 11,000 Btu per pound was used; and low grade, for which a heating value of 9000 Btu per pound was used. (See table I.)

The selection of these heating values does

• BUTANE-PROPANE News welcomes letters from our readers, but it must be understood that this magazine does not necessarily concur in opinions expressed by them.—Editor.

TABLE I

Fuel	Cost Per Unit Quantity	Cost Per One Million Btu	Efficiency Of Burning	Cost Per Million Btu Usefully Applied
Natural Gas	\$.60 per 1000 cu. ft.	.60	75%	\$.80
Propane	.12 per gal.	1.31	75%	1.76
Stove Oil	.13 per gal.	.96	60%	1.60
High Grade Coal	15.00 per ton	.58	50%	1.16
Medium Grade Coal	15.00 per ton	.68	50%	1.36
Low Grade Coal	15.00 per ton	.84	50%	1.68

not necessarily coincide with those set up by authorities in the coal industry, but the values are merely used for comparative purposes in this letter.

We feel that the efficiency of burning which was selected for the various fuels is fair. In fact, it may favor oil and coal, and be low for natural gas and propane. No consideration has been made in the comparative figures for the additional costs of coal and ash handling, nor for the costs of cleaning and redecorating required by the use of coal and oil for heating purposes.—Ed.

Gentlemen:

We would appreciate it very much if you could advise us if you have information or source of information on propane gas, as to what it does, where it comes from, and Btu content, and various natures of the gas.

W. G. D.

Wisconsin

We are sending you a pamphlet entitled "The ABC of LP-Gas," taken from the "Handbook Butane-Propane Gases" which will give you this information, except for the Btu values for various units of measure.

These are added below:

Gross Heat of Combustion	Propane	Butane
Btu per pound	21,690	21,340
Btu per cu. ft. at 60°F...	2,521	3,267
Btu per gal. at 60°F.....	91,300	103,000

Gentlemen:

I would like to know the vaporizing capacity of a 30,000-gal. water capacity propane tank, aboveground, on an industrial job. The tank is 103 in. in diameter and 70 ft., 10 in. long. The propane will drop as low as 10,000 gals. I wish to know what the tank will vaporize at this level.

Ten thousand gallons, or one-third of capacity, is, I believe, about 40% of tank area that will be wet, or 845 sq. ft. This is as far as I have gotten.

The design temperature in this area is 10°F. The regulators on tank are set to deliver 25 lbs.

I would like to know the formula to figure this as soon as possible.

S. L. P.

North Carolina

You state that the regulators are set to deliver vapors at 25-lb. pressure. There must be some pressure drop through the regulators to induce a proper flow and a regulated pressure. Assume that a minimum of 5 lbs. drop is required through the regulator. (The regulator manufacturer should be consulted for the maximum flows with various inlet and outlet pressures.)

Then the pressure in the storage tank must not fall below 30 psi gauge. Table 3, "Thermodynamic Properties of Saturated Propane," p. 26, of the Handbook Butane-Propane Gases, indicates the temperature of the liquid propane must be about 8.5°F above zero for it to produce 30 psi pressure gauge (44.7 psi

absolute). A minimum outside temperature of $+10^{\circ}\text{F}$ allows only 1.5°F temperature differential to transfer heat to the liquid in the tank.

On p. 47 of the Handbook a discussion of the heat transfer in the section headed "Batch Vaporization" uses 2 Btu per square foot of tank surface per degree F temperature difference per hour as a conservative rate of heat transfer. Since you have estimated 845 sq. ft. of surface is in contact with the liquid when 10,000 gals. are in the tank, a heat transfer rate to the liquid propane of 845 sq. ft. \times 2 Btu per hr. per sq. ft. per $^{\circ}\text{F} \times (10^{\circ}\text{F} - 8.5^{\circ}\text{F}) = 2535$ Btu per hour.

It requires about 168 Btu to convert 1 lb. of liquid propane at 10°F to vapor at 10°F and 30 lbs. pressure. Therefore, under the conditions outlined above, $2535 \div 168 = 15$ lbs. or 3.3 gals. would be vaporized by the outside heat transferred to the liquid through the walls of the tank from the atmosphere.

The high discharge pressure from the regulator on the tank demands the high tank pressure and temperature. If the allowable minimum tank pressure could be reduced to 15 psi gauge, the corresponding temperature of the liquid and vapor in equilibrium is about -12.5°F below zero. Then the temperature difference would be 22.5°F and the heat transfer at minimum atmospheric temperature would be $845 \times 2 \times 22.5 = 38,000$ Btu. However, at -12.5°F it requires about 174 Btu to vaporize 1 lb. of propane. Therefore, $38,000 \div 174 = 218$ lbs. or 48 gals. per hour.

If the temperature of the liquid in the tank does drop to a -12.5° and the outside temperature is 10°F frost will start to form on the tank at 30% relative humidity. Higher relative humidities and higher outside temperatures will tend to increase the rate of frost formation and reduce the rate of heat transfer to the liquid.

Items which may be considered as aiding your problem are:

1. The rate of vapor withdrawal may be intermittent and usage will not be heavy during the minimum temperature period.

2. Vapor withdrawal may be low during the period when the temperature is falling, and the temperature of the liquid propane will remain higher than the temperature of the air. Then when vapor is withdrawn faster than heat is transferred to the liquid, some of the latent heat in the liquid will be given up to produce vapor.

3. Radiation from the sun will quickly add to the temperature and give substantial aid if the load does not come on until after sunrise.—Ed.

Gentlemen:

How many hundred miles can a dealer afford to haul propane either by tank car or transport and show him a profit on his investment? In other words, at an average, approximately what should be the difference between cost and selling price (gal.) per hundred miles of hauling distance?

J. W. K.

Iowa

The distance which a dealer can haul gas and sell it at a profit can only be determined by an analysis of that dealer's operating costs. In thickly populated areas, dealers may be located in adjoining towns or areas only 25 or 30 miles away, while in other sections where the population is scattered, the nearest dealer may be two or three hundred miles away and it will still prove profitable to deliver to customers over 100 miles away.

All overhead, salaries, and operating costs should be added to the cost of the fuel, then the margin of profit added to this figure. Due consideration must also be given shortages, shrinkage, or other items which reduce the number of gallons sold below the number purchased. A dealer should know or determine the cost of operating his delivery truck. This will include the driver's salary, gasoline, oil, tires, maintenance, depreciation, etc. It can be reduced to a cost-per-mile basis and then determine where it is profitable and where it is not profitable to deliver fuel.—Ed.

Gentlemen:

When some of our tanks are nearly empty the customer gets a very distinct and disagreeable odor in the house. We have checked the lines very thoroughly with soap and water and there seem to be no leaks. Could you offer any suggestions?

T.P.

Ohio

This is undoubtedly due to a concentration of the odorant that is placed in the fuel as a safety precaution to enable people to detect leaks if such occur.

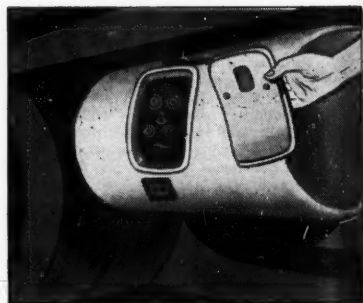
Sometimes the concentration of these odorants becomes very objectionable. There is no way to remedy this that I know of except to pick up the tanks and have them purged.—Ed.

Recessed For
SAFETY!



All valves and fittings of
AMERICAN Mobile Safety Tank
are Recessed for Safety

Vital valves and fittings can't be knocked off. Cover plate protects against road grime and provides accessibility. American Mobile Safety Tank gives you maximum fuel capacity in minimum space for longer more profitable hauls. Quality-built to API-ASME or ASME codes. Low initial cost, economical operation and long life. Hundreds in use. Order now.



"CRAFTSMEN IN STEEL"

AMERICAN PIPE & STEEL CORPORATION

2201 W. Commonwealth Ave., Alhambra,
California Cable Address AMPSTEEL

Comment

WE are going to tackle this tank car demurrage problem just once more.

In the October issue (p. 121) we reported that the ICC had issued an order stating that because of a shortage of freight cars, demurrage would be charged for Saturdays and Sundays the same as weekdays unless such days fell within the "free time provision."

Then in November (p. 32) we published the statement of a reader who said he understood "freight cars" did not include tank cars.

Since then, F. M. Taylor, of Texas Natural Gasoline Co., warns that the order does include tank cars.

By this time we were considerably confused, but quite miraculously there appeared in our office the day before this issue went to press Mr. Interstate Commerce Commission himself in the form of Victor E. Hanning, chief of the Section of Explosives, ICC, Washington, D. C., and Clyde Hogsett, California regional agent for the ICC.

It took just about two seconds to clear up the whole matter.

Tank cars are included and demurrage will be charged as first specified unless the cars are owned or leased by the consignor or consignee and standing on privately owned sidings of the consignor or consignee.

That's the last word. Except the time limit still stands as Feb. 1 for the effective period of the new order.

Many a dealer has been wondering how seriously the current war situation is going to affect fuel supply and

transportation facilities this winter.

Incidentally, they are wondering how cantankerous Old Man Winter is going to be.

We can't help a bit on forecasting weather extremes or severities over the next several months but readers can certainly glean lots of information on supply conditions by reading E. W. Voice's article farther along in this issue entitled "Distribution Will Be Bottle Neck If Hard Winter Comes in '51." The fuel supply will be adequate.

And while you're scanning the editorial features, take time to read about the new method of sizing water heaters to household demand by C. E. Bartlett.

It really gives you a basis upon which to figure size and requirements, and supplants the generalities that have been used for past estimates.

You will want to keep a copy of this article where every salesman can read it before he estimates a water heating installation.

A quiet investigation of the REA and TVA has been in progress in Washington, under House of Representatives executive expenditures subcommittee. Use of money for lobbying and propaganda is being watched, and some of that propaganda has been against legitimate small business men in the LP-Gas business.

Only 25 more days until Christmas. Make it a merry one!

By Ed.



when it
comes to
**QUICK
DELIVERY**

BEACON'S
got me beat!

That's the reason it's wise to
depend on Beacon for

BUTANE - PROPANE

Yep, I only make my deliveries once a year, but Beacon delivers the year 'round . . . and when it comes to service, you just can't beat 'em. They are dependable and efficient . . . try them on your next order.

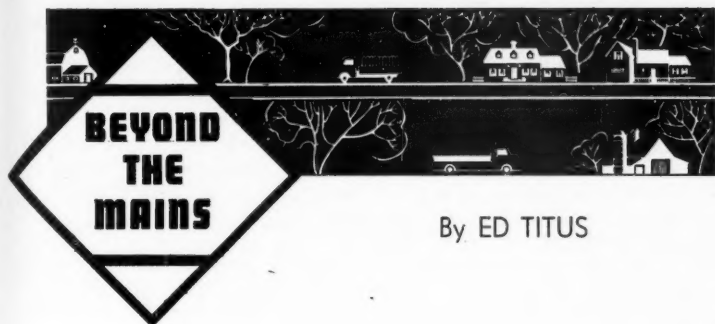
BEACON

PETROLEUM COMPANY

P. O. BOX 2618 . .
TULSA, OKLAHOMA

P. O. BOX 2478
HOUSTON, TEXAS

53 West Jackson Blvd.
CHICAGO 4, ILLINOIS



By ED TITUS

MAINE is said to provide an example of how the electric crowd may infiltrate a state government.

We're told that in executive posts and state legislature, there are various former electric company employees who still appear to show sympathy for that industry.

Forecasts are there'll be a batch of nuisance and restrictive bills, aimed at LP-Gas in the current session of the Maine legislature. It's no small wonder.

No wonder either that the electric fellows are worried about the continued forward march of propane and butane. Heating and automotive business will increase its volume in the Northeast, and may reduce prices for other uses competitive with electricity.

Legislative tricks can be licked too, and more and more so as LP-Gas men learn their potential political power, as demonstrated in many states, and learn to work together.

Better think fast, electric guy!

In connection with alleged bias of some newspapers against LP-Gas, it's pointed out they may actually be owned by electric interests. Twenty years ago this created a major investigation of nationwide proportions. Interests controlling both paper and power bought control in chains of newspapers, with heavy Wall Street financing. This also enabled control of policy.

The hullabaloo raised by the free and un-kept press led to withdrawal of the power interests from newspaper enterprises, in theory at least.

If you and other LP-Gas men are treated unfairly by

newspapers in your community or state—if they will not print legitimate news about your fuel—and distort facts about accidents, you might look into paper ownership.

Some day there might be another investigation.

There are dozens of guesses about how much manufacturers of civilian products will be cut back on their supply of steel and other essential materials as a result of the defense program. One competent authority estimates the arms program in sight directly and indirectly will take 15% of the steel industry's output in a year of capacity operations. In addition there will be some steel needed for construction, in expanding the steel industry itself. And if there are strikes, we'll not have capacity production.

It seems unlikely that when things get squared away the materials available to the whole of any important industry will be cut more than 25%, unless and until a much greater emergency develops. Many may find themselves cut 5% or less.

And because of expanded production of this country, there is capacity for both civilian and mobilization needs.

Scarcities and pinches so far have been caused by hoarding. There certainly have not been enough definite government defense orders to cause scarcities.

A man who buys steel or steel products he doesn't need leads others to do the same. Before he knows it he may be looking in vain for a certain item that is lying idle in a nearby plant.

Warehouse stocks constantly are replenished, but if everyone starts buying beyond his needs the system breaks down, and everyone suffers.

Walter Hoagland, of Fisher Governor Co., the sage of Westport, Conn., thinks the time has come to stop wailing about competition from the Rural Electrification Administration. Regardless of what one may think of the subsidies to this agency and the economic thinking behind it, it's here to stay. If a man has a farm and can make a good deal on a pump through dealing with REA, he is going to do it. He's also going to get lights for his barn through REA, if that's the best way.

Only thing to do is go out and sell REA customers on LP-Gas for cooking, water heating, refrigeration, agricultural uses, and anything else where LP-Gas can do a better job.

"COOK GAS TIME"

EVERY DAY

Cook Gas founds its advertising faith on the old-fashioned newspaper in a flood of ads of all sizes. Its prospects, however, may expect to receive any morning a Cook Gas special postcard or a manufacturer's product mailing bearing the Cook Gas stamp, see the Cook Gas billboards as they drive down the highways, or hear a Cook Gas announcement over the air waves.

This is a case history of a hard-hitting volume advertising effort. Whereas some dealers may doubt the quantitative philosophy of advertising, Cook Gas continues to capitalize with profit on its own and product names.

Although this type of advertising is not applicable to all territories, the Cook Gas day-in and day-out advertising follow-through is worthy of study by every dealer.

By GRIER LOWRY

ABOUT 60% of the selling job is completed when the prospect walks in your front door! So says E. C. Cook, president of Cook Gas, Plumbing & Heating Supply Co., St. Joseph, Mo. And the job of bringing in the prospect is done by an advertising program that hammers daily at the "Midland Empire" (northwest Missouri and northeastern Kansas).

There are hits and misses but there is nothing hit-or-miss about the over-all program. It is handled on a clockwork budget and insertion schedule geared to sales volume and seasonal demand.

Best results per dollar have come from newspaper advertising. These ads are in sizes anywhere from 1-col. x 3-in. to a full page—but they never miss a day! The Cook name is nearly always the most prominent element in these product ads. Product names are continually plugged. Repetition is the keystone. Small advertising space is used consistently throughout the year—the local newspaper contract covers daily 1-col. x 6-in. ads and 2-col. x 10-in. ads on Sundays, but sizes vary from smaller 2- and 3-col. ads and larger ones, 3-col.

Don't Wait Til
It's Too Late!

NOW
IS THE TIME
TO HAVE THAT
NEW
GAS FURNACE
INSTALLED
SIZES
RURAL OR PROPANE
SEE US TODAY

COOK'S
Plumbing & Heating
1201 Frederick

When You
Can't Get
Hot Water
for Your Bath
Don't Cuss,
JUST
CALL US
2-2591
for the Best
Gas Water
Heaters in
St. Joseph
Natural - Propane

COOK'S
Plumbing & Heating

Silly... Isn't It
We Agree That It Does
Sound Silly to Be Talking
About Heating Equipment,
However—

NOW IS THE TIME
To Be Thinking About This
Winter's Heating Problem.

GAS
HEATERS — FURNACES
Forced Air and Gravity
Floor and Basement
Types
Natural and Propane

See us and see us for the best
gas burning equipment now
our selections are complete
the price right!

WE CAN SAVE YOU MONEY

COOK'S
PLUMBING & HEATING
1201 Frederick 2-2591

COOKGAS

FOR
COUNTRY
HOMES

A Bottled Gas for
Homes Beyond the Mains

**ECONOMICALLY
INSTALLED**

\$9.50

Does the Job

RANGES - WATER HEATERS
SERVIL REFRIGERATORS

If It Burns Gas—
We Have It!

COOK'S

GAS, PLUMBING
& HEATING CO.

1201 Frederick

Forget
Coal
Shortages
Forever

COOKGAS
PLUMBING and HEATING
Can Install
NATURAL and PROPANE
GAS

The smallest element, but not the least important, in the Cook Gas program, is the 1-col. classified display ad. They never miss a week-day issue.

x 10-in., to a full page. Best results have been obtained with heater ads.

Emphasis placed on timely, seasonable items helps to keep up sales through what are considered selling valleys on most dealers' schedules. At vacation time casseroles, toasters, and roasters are featured. A cold spell in the fall or spring brings out gas heaters.

Usually, the spotlight in each ad is turned on a single product. One Sunday, it may be a hot water heater, the following Sunday, a range. Eight sales resulted from one water heater ad. A package kitchen deal is another advertising "special" that pulls well.

The firm's long, successful use of newspaper advertising was highlighted this year by a 3-day 40th anniversary party. The event



BUTANE-PROPANE News



was heralded in a full-page layout in the local daily (cost, \$400).

Advertising played a dominant role in the success of the celebration. The full-page spread, illustrated with photographs of the downtown store and the plant, contained a coupon gimmick, accountable for much of the affair's success.

Newspaper readers could either mail the coupon, or bring it in personally, to participate in drawings for prizes which included a gas range, a 32-piece set of dishes, a Presto cooker, and 6- and 8-cup percolators. Some 1600 of the cou-

The busy Cook Gas office in downtown St. Joe. Left to right: Sue McPike, stenographer; Charles Enos, Jr., 2nd vice president; Veronica Midgaugh, secretary-treasurer; and Charles Enos, Sr., vice president and sales manager.

pons were received during the party's 3-day run.

Additional "come-on" was supplied by door prizes—metal pot holders and measuring spoons and toy banks for the youngsters.

"One of our salesmen demonstrated the efficiency of a gas range by baking biscuits," said Charles Enos, Sr., vice president and sales manager of Missouri operations. "The fact that a man could turn out tempting biscuits impressed prospective buyers, and crowds eddied elbow-to-elbow around this exhibition. The biscuits were served, with honey, by wives

Cook Gas billboards, treated with "Scotch Light" for night-time visibility, are situated on busy highways into St. Joe. They are 6x12 feet, silver and cream letters on a green background. Bottle at left is silver.



AS HEATERS - FURNACES RANGES

Available for IMMEDIATE DELIVERY

3 Famous Make
Heaters
From ...
BY
STY
ARMSTRONG
WARM MORNING
\$15.00 Up
on Gas and Propane



WORRIED ABOUT HEATING YOUR HOME THIS WINTER?



INSTALL A NEW GAS HEATER

3 FAMOUS MAKES TO CHOOSE FROM
Temco
Martin
Hot Boy
Armstrong
Warm Morning

\$15.00
Up



FREE ESTIMATES
THE BEST IN GAS HEATING
Latest Models — All Sizes — Buy Early
All Designed for Natural or Propane Gas

USE OUR CONVENIENT PAYMENT PLAN

SALESMEN
C. F. BLACKFORD JIM HEWTON
COOK GAS, PLUMBING,
HEATING & SUPPLY CO.
1201 Frederick Ave. Phone 2-2591

Mommy and Daddy Are Going Out Tonight But ... The Furnace Won't!



While you are taking advantage of the social life that club activity offers you this winter give your family the protection of a GAS FURNACE and the atmosphere of a winter home in Florida.

IN FURNACES
Choose From ...
COZY and PAYNE ... The Finest Anywhere

IN HEATERS
Choose From ...
*TEMCO *MARTIN *HOT BOY
*ARMSTRONG *WARM MORNING

Highest Quality of Gas Heaters

COOK GAS PLUMBING & HEATING SUPPLY COMPANY
1201 Frederick Avenue PH. 2-2591

These Sunday ads range from 3-col. x 9 in. to 2-col. x 12-in.

of salesmen. We also served 35 pounds of coffee and four cartons of cookies."

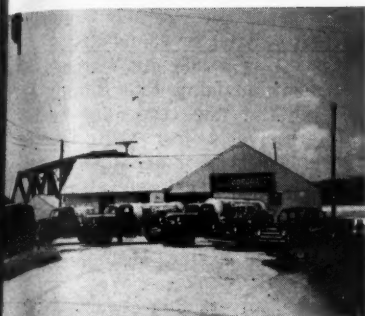
It is worthwhile, both from a dollar-and-cents and a publicity viewpoint, to stage a celebration such as this, Mr. Enos believes.

"Our volume during the week of the festivities," he said, "was five times as great as the corresponding week of a year ago. One salesman sold \$2400 worth of merchandise, and two others racked up almost that much. Our store was jam-packed; many people didn't buy merchandise, but many have since returned and bought goods. Moreover, names on the coupons filled out for the drawing made a nice addition to our mailing list."

Direct mail promotions are an additional sales booster. Stuffers with bottled gas statements are routine. Literature furnished by manufacturers and stamped with the Cook name is routed to all boxholders in the Midland Empire at regular intervals. Five hundred to 1000 boxholders are reached on each mailing.

This type of advertising clicks, Mr. Enos knows, because people come in to ask about the products featured, waving the literature in their hands. "And the only cost to us," he beams, "is the postage."

In plugging bottled gas, the company mentions only the installation cost, \$9.50, although the total outfit includes a \$10 deposit, \$8



The Cook Gas bottling plant, near St. Joe. From here trucks fan out over a 75-mile radius.

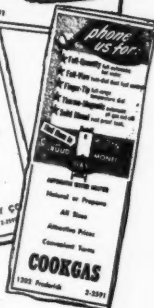
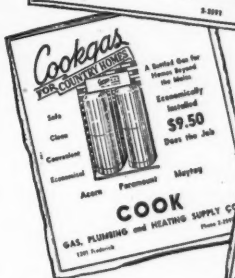
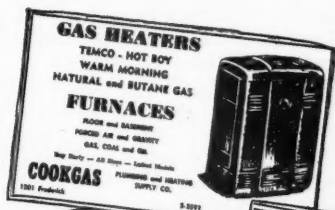
for a 100-lb. cylinder of gas, plus 16 cents, for a total of \$27.66.

The company has set up a bottled gas delivery system that is a model of efficiency. Customers are supplied addressed postcards which necessitate only the inclusion of their names and addresses and the date on which they wish a cylinder delivered.

Shortly before the end of each month, orders are recorded and grouped according to one of the 16 routes for the succeeding month.

"A well-equipped, well-trained installation crew is one of the keys to our success," Mr. Enos said. "In briefing personnel, we lay stress on the safe handling of gas. Courtesy, neatness, and efficient workmanship are other qualities we encourage in personnel.

"After each appliance is installed, our servicemen explain the operation of the mechanism and



Cook Gas ads are all sizes. These small ads are 1-col. x 5 in., 2-col. x 4 1/2 in., and 3-col. x 3 1/2 in.

Headquarters of the Cook Gas, Plumbing & Heating Co. has a No. 1 location in St. Joseph's business district.



"Our installation staff is tuned to do a good job of selling," Mr. Enos said. "Our objective is to sell at least one new appliance with each bottled gas installation. Our

Radio advertising consists of spot announcements aired just before play-by-play accounts of local ball games in season. At present, these announcements are scheduled daily at 5:45 p.m., "Cookgas Time," over KRES, the local radio station. The announcements are changed weekly.

Outdoor advertising, the last link in the Cook promotional chain, includes three highway signs, all treated with "Scotch light," visible after dark.

A 7x21-foot facsimile of an LP-Gas cylinder, also Scotch light with green letters on a silver background, gleams its message — "Home of Cook Gas" from the sidewall of Cook Gas headquarters.

[illegible]

Page ad announcing a 3-day anniversary celebration. An arrow points to the coupon necessary for the prize drawing. Sixteen hundred "News-Press" readers clipped this coupon and either mailed or brought it to the store.



RADIO CONTINUITY

Announcer: P-A-U-S-E
EMPHASIZE
PERSONALIZE
I SELL I

Advertiser... Cookgas Company

Date Aug 21, 1950

Time

Writer

_____, Cookgas time! Time to cook with gas!

Your heating problems can be solved quickly, efficiently and economically by the heating and furnace experts...at the Cookgas Company, 1201 Frederick Avenue. The Cookgas Company features famous old names in heating units...and they will be only too happy to help you with any and all of your problems! Don't delay....for it won't be long till winter is here! Remember...if it burns gas... Cookgas has it! The Cookgas Company, 1201 Frederick Avenue.

Thirty-five appliances are on the showroom floor, including 10 or 15 models of gas ranges, six or eight room heaters, and eight or 10 water heaters, in at least three sizes.

Located on a leading traffic artery, the firm features seasonal appliances by positioning them at the front of the showroom with bright spotlights overhead.

In store displays, publicity, and personal encounters with customers, Mr. Cook and his good right arm, Charlie Enos, point up the manufacturer's name. They believe that recognition of product names creates confidence for the consumer and breaks down sales resistance.

Cook's has made a lot of headway since it sold its first bottled

A copy of a radio script used on "Cookgas Time," a daily spot announcement broadcast.

gas in 1932. And consistent advertising gets a big share of the credit. At the outset there were less than 75 customers on the liquid gas customer rolls; now the firm supplies gas on a wholesale basis to 56 dealers in northwest Missouri towns ranging in size from 200 to 6000, and has 1500 retail customers, including farm homes, country clubs, restaurants, hotels, hatcheries, and print shops. Some 500 customers have bulk tanks ranging in size from 100 to 1000 gallons. The company covers a territory within a 75-mile radius of St. Joseph.

WHY POLAND SPRING HOUSE CHOOSES GAS

By STEPHEN A. VICTOR

ONE of the nation's best known resort hotels — the famed Poland Spring House at Poland Spring, Maine, recently completed its sixth year of cooking with bottled gas.

"There's no fuel to compare with it," says Chef Frank Mariello. And Manager Thomas Conner agrees with him.

What is there about bottled gas that appeals to these hard-headed

hotelmen? To find the answers, Mariello and Conner were interviewed separately. Their replies provide a guide for dealers anxious to sell commercial installations.

From the chef's point of view, according to Mr. Mariello, the most important factor in favor of gas is kitchen heat control. Gas-fired ranges don't have to be kept burning 24 hours a day, and the kitchens consequently get a chance to cool off during the night. It makes the chef's life easier, more pleasant.

Temperature control is another major factor. Mr. Mariello explained that the secret of good cooking is proper oven and range temperatures. Let them vary from what they're supposed to be, and the quality of the cooking falls off. And thermostatically controlled

The Manager



"It saves 20 per cent . . . it's cleaner . . . it boosts kitchen efficiency . . . keeps chefs happy, and good chefs are hard to get and keep."

"... no fuel to compare with it ... a cooler kitchen ... temperature control ... minimum stove maintenance ... steady fuel supply ..."

gas heat beats any of the fuels he has worked with in the past.

Gas-fired kitchens also require smaller staffs, the Poland Spring House chef pointed out. Because fires don't have to be kept going all night, nor take a long time to come up to heat, the cooking staff is cut. When Poland Spring used coal, a man had to come on duty at 2:30 a.m. to get the coal fire started on its long, slow climb to cooking temperature.

Maintenance costs are lower, too. Mr. Mariello recalled a southern hotel he worked in last winter which used oil-fired ranges. There, in a short four-month season, the metal tops were burned off the ranges twice because of the difficulty encountered in controlling the excessive heat of the oil fires. That's something, he said, which never happened to him while he was working in a gas kitchen.

Gas is also favored because of the constant supply of fuel which requires little watching. And this chef emphasized he doesn't have to worry about the purity of his gas fuel supply. But with oil, for instance, a bit of water mixed in with the supply will result in fires burning faultily, if at all.

"Give a chef his choice of cooking fuels," said Mr. Mariello, "and he'll choose gas every time."

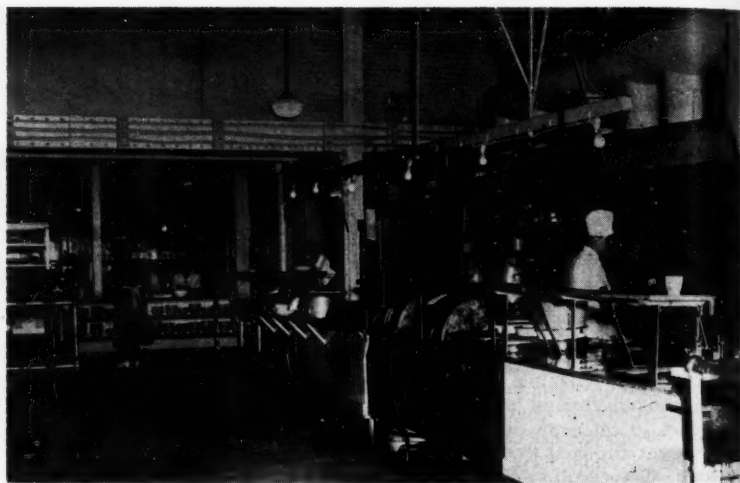
The Chef



Now, let's take a look at the reasons which made bottled gas so attractive to Mr. Conner, the manager. His prime responsibility of course, is the economical, efficient operation of the hotel. And the kitchen is an all-important phase of that operation.

"Primarily," said Conner, "we had two thoughts in mind when we installed our gas equipment in the spring of 1945—economy and cleanliness."

Poland Spring currently uses approximately 5000 pounds of propane a month for cooking during a five-month season, running from



Kitchen arrangement at "Poland Spring House."

mid-May to mid-October. It pays 6.25 cents a pound for its gas—averaging \$312.50 a month for cooking.

"That figure represents a saving of approximately 20% over comparable cooking costs we bore when we used coal in the kitchen," explained Mr. Conner.

He readily admitted that on a strict cost comparison between the two fuels, coal was cheaper. But he pointed out that savings made possible in other ways made gas actually far cheaper than coal.

For one thing, painting costs were cut 300%. During the coal range era, the Poland Spring House kitchen was frequently painted twice and sometimes three times in one year. Since the gas kitchen was

installed, painting is necessary about once every two years.

"And you must also consider that we don't have to use our own trucks or employes to transport and handle coal. Nor do we need as big a kitchen cooking staff," said Conner.

Cleanliness really was a big kitchen problem when coal was used at the Poland Spring House. Coal dust was stirred up several times a day—whenever the coal was added, or ashes hauled. The dust settled on everything from the rafters on down. Extra maintenance help was needed to keep the kitchen clean.

Poland Spring's main kitchen is equipped with eight hotel-type Garland ranges, two fryers and two broilers. A small grill room, open all day and evening, is fitted with

a Gar
scatte
pied h
famil
and h
emplo
Garla
bakin
Tot
1950
hotel
poun
used
anoth
in th
cupie
for
will

Se
is D
ton,
main
outs
inde
twini
latic
tage
men
ice
stall
tom
D
and
Hou
gues
prox
dail
ture
hote
sear
abo
com

DEC

a Garland gas grill. Eleven cottages scattered about the grounds, occupied by department heads and their families, also use gas for cooking, and hot water heating as well. An employes' restaurant also has two Garland ranges, and a gas-fired baking unit.

Total gas consumption during the 1950 season—for cooking at the hotel only—amounted to 25,000 pounds. Another 5,000 pounds was used by the eleven cottages, while another 5,000 pounds will be used in the cottages which remain occupied all year. Total consumption for all purposes during the year will run about 35,000 pounds.

Has 24-Cylinder Hookup

Serving the Poland Spring House is DeBlois & Lauziere of Lewiston, Me., a Utility Gas dealer. It maintains a 24-cylinder hookup outside the main kitchen—12 cylinders to a side—while regular twin cylinder type domestic installations are found around the cottages. Kitchen and grill room equipment is fed from a two-inch service line running from the main installation. This installation has automatic regulating equipment.

During the social season—July and August—the Poland Spring House serves an average of 1,200 guest meals daily. Add to this approximately 1,000 employe meals daily, and you will get a fair picture of the gas cooking load at the hotel. During the remainder of the season, guest meals served go to about 1,500 daily because so many conventions use the hotel facilities.

A little simple arithmetic shows that the hotel served about 350,000 meals during its 1950 season. The total fuel cost was \$1,562.50 (for cooking only). The actual per meal fuel cost ran about .0045 cents—hardly what you'd call expensive.

These are some of the major reasons why Poland Spring House—one of the nation's top resort hotels—has been cooking on bottled gas for six years, and intends to continue doing so.

They also make good selling points when you run up against a commercial prospect because they are not the ideas of gas men, but of hotelmen. Why not use them?

Rheem Announces Plans to Produce Gas Refrigerator

Rheem Manufacturing Co. is preparing to produce and market a new gas-absorption type of household refrigerator, according to a Nov. 13 announcement by President R. S. Rheem.

The refrigerator, developed by Clayton and Lambert Manufacturing Co., Louisville, Ky., will be made by Rheem under an exclusive agreement just concluded between the two companies.

In the process of development and testing for more than five years, the new refrigerator will be available in popular capacities. It will be sold under the Rheem name. Intensive field and laboratory tests have shown unusually high operating performance and efficiency. Further testing and design study will be carried out prior to manufacture of the unit in commercial volume.

Dealer's Customer "Dead File" Is Source of Pre-Christmas Sales

By GENE CREIGHTON

THERE may be extra dollars in Christmas gift sales in your "dead" files of paid-up customers. This year, the Lakewood Appliance Co., Lakewood, Colo., not only discovered the hidden gold in these records but re-activated a number of deadwood customers.

In going over old records early this year, Harry Aldrich, head of the firm, was surprised to find that the number of paid-up account sheets still on file amounted to more than 400. Those on the list of 400 names were contacted by telephone to determine if these old customers were still on hand. Almost all proved to be at the same address. Mr. Aldrich felt the list should prove a rich source of Christmas gift sales.

400 Live Prospects

The 400 names, representing customers already using LP-Gas appliances sold by the firm, were divided among the seven employees of the firm. Beginning Nov. 1, every employee was required to call five names per day, extending Christmas greetings, and inviting the customer to use his old charge account to buy a long list of suggested Christmas gifts in the store. Included were many small appliances, houseware items carried by the store, etc.

Mr. Aldrich has been surprised by the pleasant reception given these telephone salespeople. "Nearly every housewife was cordial, and seemed pleased over our apparent thoughtfulness," he said. "By getting an early start, we are managing to sell most of them before they have set up their gift lists, even including new appliances for the home. The important thing is we are following up a

market in which we already have an entry, and offering the customer a chance to use his charge account with no bill to pay until after Christmas. When we have pointed out that there might be a shortage next year of the appliances offered as Christmas suggestions, some of the old customers reacted by asking us to send the gifts out."

By the end of the pre-Christmas season, Lakewood Appliance Co. expects to clean up its entire gift inventory, and, more important, establish charge account relations which were merely "deadwood" in the file before. Mr. Aldrich is so impressed with the result that he decided on the policy of keeping a complete ledger sheet of every customer's purchase, including all details and whether cash or charge, for similar use during subsequent Christmas seasons.

Synthetic Rubber Plant Again Becomes Active

The first of the nation's all-purpose synthetic rubber plants to be reactivated under the government's expanded rubber production program started production on Oct. 12, 20 days ahead of schedule, at Port Neches, Tex.

The huge plant, designed with a production capacity of 60,000 long tons a year, has been thoroughly modernized by engineers of United States Rubber Co. so that it will produce more than 72,000 long tons a year when operating at peak load.

What is it?

Performance Rating

OF AUTOMATIC WATER HEATERS

By C. E. BARTLETT

Ruud Manufacturing Co.,
Pittsburgh, Pennsylvania

It might be a good idea for those who sell gas water heaters and are bedeviled by the false claims of competition to learn and tell the truth, and the whole truth, about water heaters.

"Gas has got it"! How much "It" gas has got is not always appreciated even by gas men. Gas has so much "It" in water heating that competition properly could claim for itself only the exceptional situation. The burden of proof is on the competition. But the buying public is seldom an unprejudiced judge. It falls for glamor and commercial cheese-cake like a male jury falls for an attractive plaintiff. It thinks gas is an old and reliable public servant, a bit on the smelly side, and, on the whole, not so good as something new. Silly, of course, but people are funny. They know so many things that are not so.

What is hot water? If it were canned and sold over the counter like canned milk or canned soup, what would constitute the useful contents of the can?

Certainly not the water in it—no! No more than the water in the milk or the soup. What the can would really hold and what the purchaser would really buy would be the HEAT of the water which is in the can. Who, then, would ask for a pint can or quart can of hot water without knowing how much heat was in the can?

Therefore, a tank of hot water has a usefulness for housekeeping jobs in proportion to its temperature, no more, no less, and that usefulness cannot be expressed by the gallon content of the tank. A 30-gallon tank of hot water means only that it contains 6930 cubic inches of water at some temperature. How much utility is in that

water no one knows until the temperature is known.

For example, if a washing machine tub of 15 gallons capacity is to be filled with water at 140° and the water in the water heater tank is at 140°, 15 gallons would be drawn from the tank—no cold water used at all.

Should the water in the tank be at 160° and the cold water be at 40°, the hot water required to bring the 15 gallons to 140° would be 83%, or 12½ gallons of 160° water and 2½ gallons of 40° water. But if the cold water were 60° and the hot water 160°, then only 80%, or 12 gallons, of hot and 3 gallons of cold would be needed.

Looking at these figures again, it will be plain that 20% more hot water at 140° would be needed than at 160°. If, therefore, the only job for hot water in that house at that time was to fill the washing machine, a 12½-gallon tank at 160° would do quite as well as a 15-gallon tank at 140°.

Bath Needs Analyzed

And, if for instance, you wanted bath water at 105° and had tap water at 160°, then the mixture of 13½ gallons of 160° and 11½ gallons of 40° water would give 25 gallons at 105°. But, if tap water was 140°, then 16½ gallons of hot and 8½ of cold would be needed.

If the public can learn what to expect from canned milk, frozen fruit juices, canned soups, etc., why should we insult its intelli-

gence by offering it a water heater with an open end specification in gallons or cubic inches without reference to the heat content?

Why such a fuss over tank size selling? Are not millions of water heaters in use which have been sold on tank size ratings? Yes, of course. And are not those most genuinely concerned over the welfare of the gas business shooting all the fireworks possible to get the selling side of the industry, utilities, plumbers, dealers and builders, to sell larger water heaters? Is not this cry for bigness an admission of inadequacy in past sizing of water heaters?

A Standard is Needed

Would it not make sense first to decide what is a gallon of hot water? What temperature should be the unit, so that a 30-gallon water heater may be known as 30 *work-gallons* or *service-gallons*, from which point accurate estimates of service can be made?

Since all hot water stored is hotter than the human hide can work with or even endure in long contact, it follows that all hot water from an adequate water heater must be mixed with cold water except when used with mechanical or automatic washers.

At the present rate of selling automatic and non-automatic washing machines—1,000,000 in the first quarter of 1950—and with the many new homes built with washers as original equipment, is it not reasonable to assume the tempera-

Storage Rating— Thermostat setting measured as a percentage of 160° (standard hot water gallon unit) x tank size.

Recovery Rating— Btu input per hr. x .83 (Btu required to raise one gal. 100°).

Performance Rating— Storage Rating + Recovery Rating.

ture which is required for a washer as the minimum necessary temperature for the home?

This temperature is 160°. This temperature of 160° is requested by makers of washers; it is recommended by domestic science labs of reputable institutions of collegiate grade; it is used in commercial laundries, recommended by Consumers' Union and makers of some of the best known soaps and detergents.

The whole group of those who have seriously investigated this subject testify to the truth of the slogan—"The Hotter the Water the Whiter the Wash."

There are some dissenting voices at setting 160° as the standard of measurement for a hot water gallon. The opposition generally bases its fear on excessive radiation loss with consequent high gas bills, ac-

celerated corrosion of galvanized steel tanks, or on excessive wear and tear on piping, brass work and washers on hot water lines.

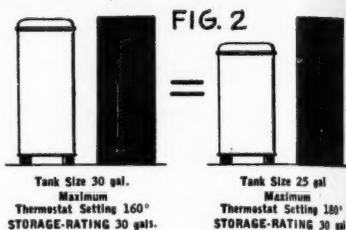
These objections are easily answered. If 160° water is not always in demand the thermostat can be adjusted to 125° or 135° or any degree desired, and turned up to 160° when needed. If a steel tank coated with zinc or other linings or coatings cannot take 160° water, there are various treatments for the tank to help resistance to rust, and also there are tanks made of metals which are unaffected by most waters at any temperature. And, as to wear and tear on the system and faucets, Consumers' Union offers the very logical suggestion of an inexpensive mixing or tempering valve for the hot water lines, except those leading to the laundry or sinks where higher temperature water may be used.

Certain it is that if higher temperature water is needed for modern appliances, it will be forthcoming. No fatherly forbidding of 160° by any agency will stop it.

A water heater, then, is satisfactory if it can supply sufficient hot water at right temperatures for the peak demands. If it can take care of the peaks it can easily handle the valleys. It would seem reasonable to suppose that a peak demand in domestic use would not last longer than one hour. The water heater may have a tank big enough to handle the entire peak or it may have a smaller tank with a faster recuperation.

So, if a 30-gallon water heater signifies 30 gallons at 160°, then a 30-gallon tank at 140° is equal only to 24 gallons at 160°, and 30 gallons at 180° is equal to 36 gallons at 160°. (Fig. 1.)

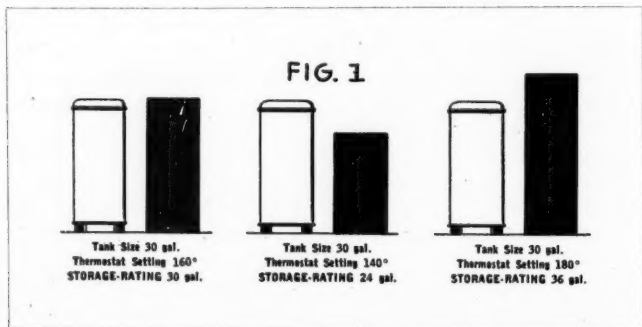
This, of course, is old stuff, but clearly rating each water heater is not old. It has always been possible, true, but seldom used. If it were used the "It" of gas would stand out plain to everyone.

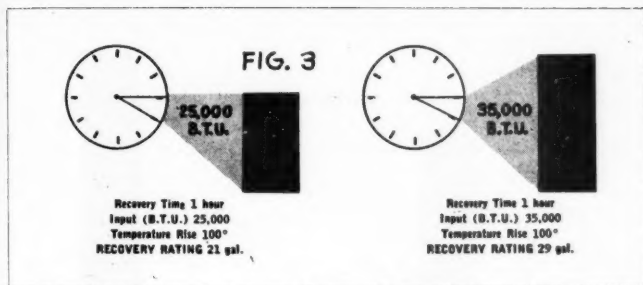


Assume that a 30-gallon water heater contains 30 gallons of water at 160° ready for the one hour peak demand. It might be given, therefore, a Storage Rating of 30 gallons. If it were a 25 gallon heater at 180° it would also have Storage Rating of 30 gallons. (Fig. 2.)

For example: to determine the Storage Rating of a water heater with a maximum thermostat setting of 140°, multiply its tank size by 80%; for a setting of 180° multiply by 120%.*

Now to this 30-gallon Storage Rating should be added the Recovery Rating. This Recovery Rating is in plain sight, always has





been, but it needs translation. On a gas water heater it is indicated by the Btu input per hour. In an electric water heater it is shown by the KWH or Watts.

Heretofore, recovery has been expressed as gallons heated per hour through a 60° rise. Most informed people think this is not realistic. Next year AGA ratings will be on the basis of 100° rise. This means that using 60° as the average initial temperature, 160° is the final or stored temperature, as suggested above, and the proper unit for Service-Gallon Storage Measurement.

To find this Recovery Rating, simply multiply the Btu input in thousands on gas water heaters by .83.** The answer is the gallons per hour heated 100° or to 160° from the average of 60° through the year. (Fig. 3.)

A 30-gallon gas water heater with 10,000 Btu input would have a Storage Rating of 30 plus (10 x .83), a Recovery Rating of 8.3 gallons per hour of 160° water—a Performance Rating of 30 plus 8.3, or 38.3. This is about the slowest water heater listed in the AGA

Approved List. A more usual 30-gallon gas water heater with a 25,000 Btu input would have a Performance Rating of 51, a 30 Storage Rating plus a 21 Recovery Rating.

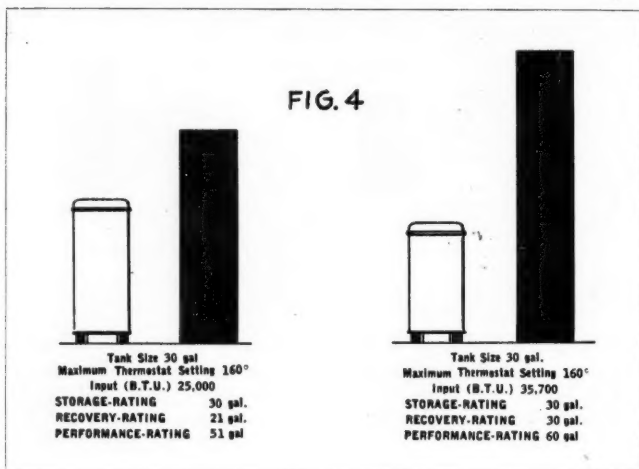
A fast 30-gallon gas water heater of 35,700 Btu input would have a Performance Rating of 60, a Storage Rating of 30 plus Recovery Rating of 30. (Fig. 4.)

Here are three 30-gallon water heaters. With the usual selling pattern all three would rate equal—just 30-gallon heaters! Yet from a work or service standpoint, alone, there is a difference of 21.3 gallons as between 38.3 and 60. The latter is 56% more efficient!

* It must be remembered that incoming cold water temperature is a factor in the thermostat setting. In determining Storage-Ratings, this factor, or average (here considered to be 60°), must be subtracted throughout. So a 140° setting becomes 80° and the 160° hot water gallon unit of measurement becomes 100°—or for a direct percentage comparison, 80% and 100%. The percentages when multiplied by a given tank size result in the Storage-Rating.

** This figure is a mathematical equivalent derived from the AGA specification that it requires a maximum input of 1190 Btu to raise one gallon of water 100°.

FIG. 4



Electric water heaters also have their performance ratings. Giving them the breaks of 100% which is 10% too high, figure 4 gallons at 100° rise for each KWH. A 30-gallon electric with a Storage Rating of 30 and an input of 1600 Watts, or 1.6 KWH x 4 equals a Recovery Rating of 6.4 gallons per hour. The addition of 30 gallons storage results in a Performance Rating of 36.4. This is less than that of the slowest 30-gallon gas water heater rated 38.3, and slower by 15 gallons, or 29%, than an ordinary 25,000 Btu gas water heater, and by 24 gallons, or 40%, of a relatively fast gas water heater.

Has Gas Got It? Put it another way. To equal a 30-gallon gas water heater with a Performance Rating of 60 would call for an electric

water heater of at least 50 gallons and an input of 2.5 KWH. And, after the first hour, should demand continue, the little 30-gallon gas water heater would continue to serve up 30 gallons of hot water 100° rise, while the electric would be perking only 10 gallons into its 50-gallon tank.

Moving up to larger demands, a home with four bedrooms, two baths, kitchen and a laundry with an automatic washer, might well be served with a gas water heater with a Performance Rating of 85. A gas water heater with a 45-gallon Storage Rating and a 56,000 Btu input giving a Recovery Rating of 42 would swing it comfortably. An electric heater of this rating would require an 80-gallon tank and an input of 1.5 KWH, or a 66-gallon tank with 4 KWH input

would neatly do it. But, again, the recuperation after the peak would be for gas 42 gallons per hour, for electric 6 or 16 gallons depending upon whether the input was 1.5 KWH or 4 KWH.

In any comparison of gas water heaters with competition it is well to consider how much time elapses between the peak hours. A gas water heater with Storage and Recovery Ratings substantially equal could handle a peak hour every other hour. The "bucket-a-day" coal stove every five to twelve hours, depending upon its firing rate. The usual oil "summer-winter hookup," every three hours; and the electric, with usual element equipment, every five hours. All these estimates are made with the provision that no hot water is

drawn during the recuperative period. And, in figuring the electric water heaters' recuperation, the input recommended is frequently higher than permissible under a special water heater rate, "off-peak" or even unrestricted as to time.

But, as "Time Marches On" the gas water heater increases its lead. The trend today is definitely toward non-ferrous, rust-proof tanks in water heaters. The washing machines, both dish- and clothes-, are demanding higher water temperatures. The estimate for 1950 is over 3,000,000 new "home laundries"; over 1,000,000 were sold in the first three months, of which 35% were automatics. This, says the "Wall Street Journal," contrasts with the 300,000 sold by

PERFORMANCE-RATING: Minimum Recommendations.

Number of Bedrooms	1	2	3	4	5	6
<i>With No Automatic Washers</i>	40	45	55	75	85	95
<i>*Automatic Clothes Washer Only</i>	55	55	65	85	95	105
<i>Automatic Dishwasher Only</i>	45	50	60	80	90	100
<i>*Both Types Automatic Washers</i>	60	60	70	90	100	110

*A—Although a recommended minimum Performance-Rating of 55 is shown for one- and two-bedroom homes having an automatic clothes washer, it is recommended the 55 Performance-Rating include a minimum Recovery-Rating of 30 gallons. In cases where the automatic clothes washer handles more than three successive loads, a minimum Recovery-Rating of 35 gallons is recommended.

B—In warm climates where inlet temperatures ordinarily do not drop below 60° F. a minimum Performance-Rating 10% under that shown should provide satisfactory service.

C—In homes where there are very short runs of tubing or small diameter pipe to kitchen and bathroom outlets, a Performance-Rating slightly lower than recommended may prove satisfactory. Conversely, long runs or large sizes of pipe will necessitate an increase in Performance-Rating.

Recovery-Rating of automatic water heaters.

Electric—INPUT—Gas (Watts)	(B.T.U.)	Recovery-Rating (Gal., 100° Rise)
1,000		4
1,500		6
2,000		8
2,500		10
3,000		12
3,500		14
4,000		16
	20,000	17
4,500		18
5,000		20
NOTE: Ratings shown for electric water heaters are the theoretical maximum attainable. They assume a heat transfer efficiency of 100%, and also assume that both upper and lower elements are "on" during complete reheating cycle. Actually, the upper element comes "on" only when incoming cold water reaches the approximate level of the element. Further, in a typical "off-peak" type of installation, a time clock prevents use of the lower element during peak-hours, thus further reducing the theoretical Recovery-Rating.		25,000 21
		30,000 25
		35,000 29
		40,000 34
		45,000 38
		50,000 42
		55,000 46
		60,000 50
		65,000 55
		70,000 59

Note: Input data usually appears in plate on jacket.

Bendix, alone, from 1937 to 1941 and the 600,000 sold in 1947. Today there are, according to the same source, 27 other makers who will have a share of 1950 sales.

For dish-washing machines the estimate for 1950 is 250,000 and the industry is just beginning. One enthusiastic maker claims for it a market second only to television.

These machines cannot work with low temperature water. They want HOT WATER. And HOT WATER does not mean "protec-

ed" tanks, it means tanks which do not need protection. And tanks like that mean water heaters of real quality and prices in accordance with it. Gas water heaters with their high performance ratings and fast recuperation will have, in the market of the future, even more than now, not only a higher comfort and service potential but also a definitely better selling position than any possible competition.

Gas has not only got "*It*"—it's got "*Them*."

Distribution Will Be Bottle Neck If Hard Winter Comes in '51

IN the past few weeks I have studied all available figures on supply and demand and talked with a number of people in the industry whom I consider well versed on the over-all picture. I have come up with one conclusion and that is there will be plenty of product but the big problem will be distribution.

In trying to guess what will happen this winter we must consider a number of things. I think all of us feel that we are in a better position to handle a peak winter load than we have ever been in the past but we must remember we have all grown considerably since we were last faced with a severe winter. You dealers have taken on lots of new business, and we suppliers have taken on new business. Of course, we don't know that we will have a severe winter this year but we do know we are due for one.

I suppose most of you remember the winter of 1947 and 1948. It was a rough one. At that time most bulk dealers embarked upon a much discussed big tank program. In some areas this program was quite successful and is still under way. In other areas the big tank program was short lived. Competition has been keen and we will all admit it is rather difficult to sell a big

By E. W. VOICE*

Liquefied Petroleum Gas Division,
Warren Petroleum Corp., Tulsa, Okla.

tank when your competitor sells a small one and swears he can keep it full. I think Kansas is in pretty good shape as far as big tanks go but I mention this because it will have a decided effect on the supply situation in some areas and will also affect the over-all picture. Many of you dealers have increased your own storage facilities and many have not but I think that all in all you dealers are in better shape storagewise than you were in the winter of 1947 and 1948.

The Bureau of Mines Report on LP-Gas shows that a total of 2,836,599,000 gallons of LP-Gas were sold in 1949. This total is broken down as follows:

57.4%	Domestic Use
19.2	Chemical Use
6.3	Synthetic Rubber
5.7	Industrial Use
8.4	Gas Manufacturing
2.7	Internal Combustion Engines
0.3	Other Uses
<hr/>	
100.0%	

This year we can expect substantial increases in domestic use and use in internal combustion engines. The chemical industry and synthetic rubber have shown marked increases in their consumption and a large amount of LP-Gas is being used by refineries in the manufacture of high-octane gasoline for our armed forces. Industrial and gas manufacturing use will probably continue to decline percentagewise as they did in 1949. This of course is being brought about by the spreading of natural gas lines.

15% Increase This Year?

Based on the Liquefied Petroleum Gas Committee of the National Petroleum Council's estimate and available figures so far this year, it looks as if the sales for this year will increase some 15%. This will increase the over-all gallons sold to approximately $3\frac{1}{4}$ billion, which is roughly 10 times the volume sold just 10 years ago in 1940.

With the prospect of selling some $3\frac{1}{4}$ billion gallons this year, let's take a look at the estimated production. From all available figures it appears that our LP-Gas production will run in the neighborhood of 3.5 billion gallons during 1950. This 3.5 billion gallons compared to our estimated sales of $3\frac{1}{4}$ billion gallons makes our supply picture look good.

B. R. Carney, manager of the Gas Division of our company, has recently completed a rather extensive study of the nation's reserves and potential supply of natural

gas liquids as compared with the potential supply of crude oil and natural gas. He shows that the total gas produced this year theoretically contains some 12 billion gallons of LP-Gas, a little over 3 times our estimated production. Of course, economically it would be impossible to recover all of this product but, I think most process engineers would agree that they could economically recover 70% of the propane and 90% of the butanes in this gas, which would amount to an additional 5.5 billion gallons. From these figures you can readily see our nation will certainly have an ample supply for years and years to come.

Huge Reserves Exist

In mentioning the years to come, I would like to quote some other figures from Mr. Carney's report. The known reserves as of Jan. 1, 1950, based on current production rates, would give us approximately 13 years supply of crude oil, 19 years supply of natural gas liquids and 29 years supply of natural gas. Of course, the term "years supply" is somewhat a misnomer as the present 24 billion barrels of crude could not possibly be produced at a rate of nearly 2 billion barrels per year for any protracted period. Consequently, America would begin to run short of crude oil within a year if no new fields were discovered. However, new fields are still being discovered so I don't think we have anything to worry about there. We should be concerned though with a better utilization of our petroleum products.

As Mr. Carney mentioned, our natural gas liquids and natural gas will last a lot longer than our crude and every effort should be made to substitute LP-Gas for other petroleum products wherever possible.

More Gallons Stored Than Before

Another thing we must consider when estimating the potential supply for this winter is that the annual supply figures are based on uniform daily production. The plants actually produce about the same amount daily regardless of whether it is in July or during the peak demand winter months. The over-all storage capacity will still be one of the biggest factors in determining the amount of product available. As far as I can learn, there are no figures on total storage capacity in the U. S. but we all know that this year there are more gallons in storage than ever before. Some of the suppliers have put millions of gallons into underground storage and others have increased their aboveground storage substantially.

If we take the total potential production for this winter, which is greater than ever before, plus the total number of gallons in storage, we end up with a potential in figures that resembles our national debt. However, as I mentioned before, the big problem will be distribution.

In certain areas such as west Texas, New Mexico and western Kansas, there should be plenty of product, especially for those who are able to send their trucks to the plants for loading. In other areas,

though, even those who load their trucks at the plants may run into occasional shortages, depending, of course, upon the weather.

Those dealers who are depending entirely upon railroad tank cars for receiving their product may not be able to enjoy this huge potential of product this winter. In the first place the Government-owned tank car fleet has been pulled away from domestic LP-Gas transportation to transport products required for aviation gasoline and synthetic rubber. As near as I can find out, our industry has increased its number of tank cars around 7% this year and this won't go very far toward moving the additional 15% of the industry's increase in volume.

Tank Cars In Short Supply

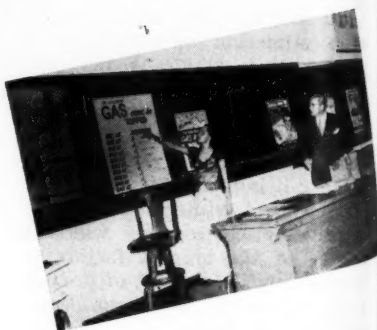
You may ask why haven't the suppliers expanded their tank car fleets along with the increased demand. The answer to that is very simple. The suppliers simply could not afford to invest in new cars when they were getting such a low return for their product. Also, the steel shortage has held up delivery on cars that were ordered for delivery this fall. No one is to blame for this car shortage but I do think all of you should be aware of it and make your plans accordingly. With another mild winter it is quite possible everyone will get along nicely but with a severe winter, there no doubt will be a transportation problem.

* Delivered at the Oct. 30 meeting of the Kansas LP-Gas Assn.

Scenes From Industry Service Schools



Dick Harris, of Suburban Propane,
at Berkeley.



Lloyd Ginn, Western Stove Co.,
at the Berkeley school.



Participants at the Central States
school at Purdue University (left to
right): J. H. Harrah, Pyrofax Gas
Div., Joe Crowden, Indiana Bottled
Gas Co., and Merle McClure, Purdue
representative.



M. B. Gault, Robertshaw, at Central
States school, Purdue.

W
in
town
cial
vem
kit
level
tion
Se
paig
appr
mar
bas
enjo
live
seco
and
smal
cial
in th
up t
ance
Di
radio
licity
chan
mar
them
Gas
chase
paper
They
verti
radio
lease
LE
son
indus
prom
deale
follow

Promotion Program Starts 2nd Round

WITH the scheduling this fall of the second round of advertising in 45 publications reaching small town, farm, suburban and commercial prospects and the mailing in November of a second merchandising kit to help dealers tie in at the local level, the National LP-Gas Promotional Program is now in high gear.

Seven distinct advertising campaigns—each with a separate copy approach, each directed at a specific market—are in progress. The initial basic selling appeal that families can enjoy city conveniences wherever they live with LP-Gas is continued in the second round of ads in the national and sectional farm, suburban and small town magazines, but the special appliance promotion campaign in the state farm papers will point up the desirability of LP-Gas appliances as Christmas gifts.

Direct-mail pieces, newspaper ads, radio "spot" announcements and publicity releases contained in the merchandising kits mailed nearly 9000 marketers tie in with the Christmas theme. Members of the National LP-Gas Promotional Program may purchase the direct-mail items and newspaper ad mats at a 20% discount. They are produced by the Beals Advertising Co., Oklahoma City. The radio announcements and press releases are free.

LPGA President Peter A. Anderson recently released a letter to the industry to encourage support of the promotional campaign and to awaken dealers to industry needs. The letter follows:

President Anderson's Letter

"LP-Gas is no longer the stepchild of the petroleum industry.

"Each year LP-Gas chalks up new gains in gallonage. In recent years the public has become more and more aware of this growing industry. The producers have stepped up their investments in fractionating equipment, and they have moved into the distributing phase of the industry.

"Why? The only answer to these heavy investments in expansion can be that the producers are beginning to change their viewpoint; I believe that LP-Gas is coming out of the doghouse.

"Sales gained 1260% in the past 10 years. The rapid pace slowed abruptly last year. Why? Several factors were involved: A warm 1949-50 winter, expansion of natural gas pipelines and service, and increased electrical competition.

"But what are we doing to protect our expanding investments? Are we getting into the fight with electricity, a fight whose tempo increases daily? Are we doing anything to make the nation LP-Gas conscious?

"Deep in the woods of northern New England, miles from the nearest community over rugged tote roads, pulp and paper firms are feeding their woods crews from LP-Gas ranges. There's wood lying around everywhere, begging to be used as fuel, yet these paper companies prefer propane.

"Their purchasing agents are paid to get the most out of every penny,

and they know that LP-Gas is cheaper for them than wood; despite the fact that gas cylinders must frequently be trucked a hundred miles or more from the nearest dealer. Nobody has to sell them on LP-Gas; they're used to figuring their own costs.

"But what about the purchasing agents in the domestic field—the biggest potential in the industry? What are we doing to get the LP-Gas message across to these wives and homeowners?"

"The need for a promotion campaign is amply proven in several surveys made by the agricultural publications. Pick up a farm magazine yourself. Notice the space devoted to advertising and publicity praising the all-electric home. Now look for LP-Gas advertising and publicity. Hard to find, isn't it?"

"It's this lack of industry-wide promotion that's beginning to show in the LP-Gas-electricity competition. LP-Gas must be pushed, must be promoted, if it's going to continue the rapid strides made in the past decade. It must be pushed and promoted even if it's just going to maintain present levels.

"Somebody has to sell the housewife. Electrical trade associations are spending millions of dollars each year to put their message across to her.

"Now, the LP-Gas industry is embarking on a national campaign to show the lady of the house that LP-Gas is the fuel for her kitchen and home. The push, the continuity and the success of the campaign depend on the support of the industry.

"Without this support, LP-Gas will fail to put its story across to the housewife and the homeowner. With it, LP-Gas can and will continue to make giant strides into the future.

"Let's not forget this."

Sunray Will Operate Huge Gasoline Plant

Sunray Oil Corp. has announced purchase of 200 liquid propane cars as an addition to the company's transportation facilities.

The new LP-Gas tankcars will be used principally at the new Scurry County, Texas, gasoline plant which will be operated by Sunray for some producers in the area, and at the company's two Oklahoma refineries.

The plant is now under construction and is expected to be in operation next spring. The new tankers, which have 11,000 gallons capacity, will be manufactured by the American Car and Foundry Co.

The Scurry plant will be the largest gas conservation project yet announced for that district.

H. W. Manley Will Direct Project

Approximately 35,000 producing acres in the North Snyder, Kelley-Canyon, and Diamond "M" fields are involved in the construction and operating contract covering development of the project. The enterprise will be under the general supervision of H. W. Manley, recently named manager of Sunray's gas and gasoline department.

Mr. Manley headed these activities for the former Barnsdall Oil Co. since absorbed into the Sunray organization.

The operators propose to construct facilities to process approximately 67,000,000 cubic feet per day of liquefied products, including propane, butane, natural gasoline and other allied products. The liquid hydrocarbon content of the gas is unusually high and engineering analyses indicate that the plant will extract between 7 and 8 gallons of liquid products per MCF of gas processed.

Unity, Sincerity of Dealers Determine Industry's Future

By T. G. TACKETT

President, National Butane Gas Co., Inc.,
Memphis, Tenn.

Mr. Tackett's remarks serve both as a powerful indictment and as new articles of faith for the industry. He says that what we do to strengthen ourselves is not as important as are our basic beliefs and attitudes. This address before the Arkansas Butane Dealers Assn. contains a message for every large and small operator.

DURING the several years that I have been associated with the liquefied petroleum gas industry, practically all the articles that I have read and all the speeches that I have heard with reference to the promotion of the industry in which you and I are engaged have dealt with the same question, "What shall we do?" and as I read these articles and hear these speeches I am again inclined to ask myself the question, are we asking ourselves the question that is of greatest importance when we say, "What shall we do?"

I am thoroughly convinced that the unity of the citizens of America and the freedom of the peoples

of the world are not nearly so dependent upon what we shall do as they are dependent upon what shall we be; and I am likewise convinced that the success of any state or national liquefied petroleum gas association is dependent upon not what shall its members do, but what shall its members be.

In the first place, I believe we as liquefied petroleum gas operators should be vitally concerned about our own personal policies. I am inclined to think that far too many of us spend more time trying to analyze and explain the policies of our competitors than we do in trying to establish and promote

policies of our own that are applicable to our own personal operations and practical in our own individual territories.

I do not believe that any two dealers are equipped by virtue of their qualifications, their assets, their territories, or their personalities to operate exactly alike or utilize the same methods of operation. Since I am thoroughly and completely convinced that it would be impossible for me to operate my business on exactly the same methods and plans of my competitor, I see no necessity whatever of my wasting any time in trying to determine why my competitors will employ the policies and procedures which they do employ.

A Negative Philosophy

During the past several years I have had the most pleasant opportunity of visiting with all types and kinds of operators, both large and small, throughout the entire Southeastern section of the United States, and certainly without any idea of criticism, I have noticed that in a great number of cases a very substantial portion of my time on these visits has been spent in listening to a given operator discussing the demerits of his competitor, rather than discussing with me some of the merits of his own operation or outlining to me some of his own personal ideas and attitudes toward the establishment of additional and more profitable policies for the future.

To indicate to you the thought that I am trying to get across, I give you an experience of just a

few weeks ago when one of our customers called and asked that an order for a certain type of equipment which he had placed some time previously be cancelled, due to the fact that he had heard that his competitor was establishing some revised sales policies, which made it necessary for him to abandon all of his previous plans and programs and try to establish other plans and programs simply because his competitor had done so.

Certainly, I am convinced that it is going to be necessary for all of us to be competitive and meet competition in the most effective way, but to me there is sounded a note of defeat when a dealer sits back and waits for his competitor to initiate plans and programs. Yes, I am sure that our state and national associations will be more successful in promoting the liquefied petroleum gas industry if we as members will exert personal and individual initiative and be concerned about policies that will build our own business instead of trying to establish policies that will destroy our competitor's business.

A Definite Price Policy

In the second place, we should be concerned about our price policy. I do not propose to get into any entanglements as I present my thoughts this morning regarding prices for which our commodities should be sold. Indeed, it is entirely impossible for me to hazard a guess at the price that should be established in the various territories for any of the commodities

sold by liquefied petroleum gas operators. However, I am convinced that the only basis upon which we can intelligently establish a sales price is to first of all determine our costs; and certainly, we operators who are not qualified to determine our costs are not qualified to remain in the liquefied petroleum gas business.

The Initial Investment

The liquefied petroleum gas industry demands a tremendous initial investment, and as the individual operators grow, it is imperative that even additional investments amounting to tremendous sums be made. In most cases, the operators in this industry have made these large investments at great sacrifice. The greater percentage of our individual operators invested, upon entering the industry, their life savings—borrowing money from the banks or any other source and obligating themselves and their families for a period of several years and in all probability robbing the members of their families of at least some of the luxuries to which they are entitled, in order to make the investment.

This industry has already ceased to be a "peanut" business, and any and all operators in determining and establishing their price structure must of necessity take into serious consideration the investment which has been made. Again, with reference to the price structure, I insist that too many of us establish our prices not upon the basis of cost but upon the basis of what our competitors charge.

There has been a great deal of discussion regarding the policy of our sales—that is, if equipment should be furnished on a title-retaining basis, if it should be leased, or sold; and again I do not propose to tell you what to do regarding this policy but can only say to you what you should be, and that alone is that you should be vitally concerned about receiving a sufficient return in one way or another from whatever commodity you dispose of. Whether or not you retain title, lease, or sell outright, you alone are in a position to know which of these price structures are profitable in your own individual operation. I hope it shall always be the policy of my company to sell merchandise at a profit instead of being forced to sell it at a loss just because a competitor does so.

Fallacy of Small Operators

Most of us in the liquefied petroleum industry have concocted a most ridiculous idea. Those of us who are small, with limited capital, limited equipment and limited personnel, have assumed an attitude that because of our smallness, our low overhead and the fact that we do most of our own work, enables us to whip the larger competitor to death. We seem to think that if the bigger operators can sell gas at 10c a gallon, then we, on account of our low operating expense, can afford to sell it at 9c a gallon. Likewise, the larger operators who have unlimited capital and equipment, a tremendous plant, large organization, think that they can put the little fellow completely out of busi-

ness, when the truth of the matter is, if either of these types of operators institutes such a procedure he is doing nothing but cutting his own throat without accomplishing the purpose of getting rid of the competitor.

Another responsibility that is ours as operators in the liquefied petroleum gas industry has to do with safety. You and I who have been interested in this industry over a period of years have read articles in pamphlets, advertising matter and magazines, and have heard speeches galore dealing with safety in handling of liquefied petroleum gas.

Not Safety Minded

I do not intend to minimize this question of safety. Certainly, we are handling a hazardous commodity and there is every necessity in the world of our doing everything within our power to promote safety for the lives and property of our customers and citizens of our state, but again I am convinced that we are not spending enough time being safety conscious.

The various institutions of our land such as the Underwriters' Laboratories, American Gas Association, inspection and insurance companies have promoted and taken very definite steps in the execution of certain safety measures demanding that equipment be built and installed in accordance with most rigid regulations, all of which is most commendable. We, too, as operators in the liquefied petroleum gas industry have fought with all the energies of our being to estab-

lish in the various states certain laws and regulations for the purpose of promoting safety.

We have insisted that all equipment be inspected and then labeled, and inspected and labeled again, and again, and again. We have cried out with all the capacities of our lungs and pocketbooks for state departments and state inspection bureaus, all with the idea of doing something about safety, and I emphasize again that every action and everything that we have done as state organizations, national organizations, inspection and insurance companies are most commendable and absolutely necessary if our industry is to continue to grow, but the thing I am trying to get across is that even with all the inspection authorities that could be imagined and with every precaution in the world being taken for the sake of safety, there will be no safety until there is developed way down deep inside of you and me an attitude or a safety consciousness that will force us to promote safety to our own organizations.

The Cost of Accidents

An accident is of far less importance to insurance companies and to state authorities than to the dealer. The real cost, and it is tremendous, falls on the operator and the industry, and of course those who are directly involved in the accident, itself. Therefore, operators in the liquefied petroleum gas industry should be safety conscious not in order to comply with certain regulations, not simply to

be able to place the Underwriters' label or the ASME code or the AGA symbol on equipment they handle, not simply in order to get by with an inspection department. There will be no real safety until those of us who are engaged in the liquefied petroleum gas industry do the very best we can, regardless of whether any inspector will be by within a few days or not.

Faith in the Industry

There is still another attitude which I think operators in the liquefied petroleum gas industry should have, regardless of their connection, whether it be manufacturer, wholesaler or retailer, and this is that we should have faith in the possibilities in the industry. It has been most apparent during the recent years that we first of all do not have proper faith in the people with whom we associate. There prevails an idea among all operators in each phase of the industry that our competitors are operating under the policy or by methods that are designed for our detriment only. We seem to think that every movement and activity on the part of the other fellow is with the idea of creating an unprofitable situation for us. There can be no real spirit of cooperation, there can be no real growth and development of an association until the members of that association practice the principles that are set forth in the Golden Rule, which, after all, is the fundamental principle upon which business association or friendship is successfully developed.

There is another phase of this idea of having faith in the industry, and that is, actually believing that the job can be done. For instance, all of us have been operating on the theory during the recent years that this is definitely a seasonal industry, and during my contacts with various members of the industry throughout the entire territory, including myself, there has been the argument that no equipment can be sold except during the late summer and early fall months, and that there is, therefore, no necessity in spending money, time and effort in promoting the sale of the equipment during the off-season. This idea has been knocked into a cocked hat, particularly during the early spring months. Most of the manufacturers of equipment have been busier during the past year than they have ever been during the same period since the origin of the industry. I have in mind one particular dealer who, during the month of May, installed 36 liquefied petroleum gas jobs, and only six of those jobs involved the cooking operation. In other words, this dealer sold 30 jobs for heating only and installed the tank and heating appliances during the month of May. This is the first year that he has attempted a sales program during the spring months, and before has always sat idly by saying that it couldn't be done. I know of a number of instances that have come under my observation during the recent weeks that make me believe that it can be done if

you and I exercise sufficient faith in the possibilities.

Still another idea or attitude that should be instilled in each of our hearts and minds is that of faith in an organization, such as the Arkansas Butane Dealers Assn. Time will not permit, neither will my qualifications allow me to explain in detail the advantages that can come to a liquefied petroleum gas operator through an association of this kind, but let it be sufficient to say, first of all, that the fellowship, alone, with men and women who are engaged in the same business is worth all of the money, effort and time that membership in the association involves.

Faith in Your Competitor

It is actually true that a number of years ago, when I first began traveling, I had an idea that all of my competitors were the "scum of the earth," that they were the most unreasonable, inefficient, unethical men that I had ever dreamed could exist; but meeting with those competitors on occasions such as this convinced me that they were just as intelligent (if not more intelligent), just as ethical (if not more ethical), just as reasonable (if not more reasonable) than I, and from that time on I have tried to exercise faith in the men with whom I have associated as members of the same industry.

Certainly, we could spend some time thinking about the faith and confidence that we ought to have in the possibilities of the educa-

tional program that is and can be sponsored by an association of this kind. Ours is a comparatively new industry, and on every hand there is a tremendous demand for men with experience, for men with the "know-how," servicemen, salesmen, installation men; and the fact that we are forced to spend time and money in the training of inexperienced men causes me to have faith in the educational program being advanced by the associations.

In view of these things, allow me to go back and say that the important question before us is not necessarily "what shall we do," but "what shall we be." What shall we be with reference to our own sales policy? What shall we be with reference to our own price schedule? What shall we be with reference to our attitude towards safety? and what shall we be with reference to our confidence or faith in the industry in which we are engaged?

How to Attain a Goal

If our sales policy is one that takes into consideration only our own operations; if our price schedule is based upon a legitimate profit above our costs; if our safety program is one that keeps us on the alert regardless of any laws or inspection service; and if we have sufficient faith in the industry, then we as individual operators through our combined efforts can build an association that will promote not only our business but the business of our friends and competitors, without jeopardizing either.

Dealers Warned of Electric Tactics At Maine Service School-Convention

By ED TITUS

THE serviceman's problems were topmost at the 1950 Maingas service school and convention at Valle's Inn, Scarborough, Maine, Oct. 17-19.



C. C. TURNER

In a strong windup, in which the major theme was an attack on the idea of dealers handling both electric and bottled gas appliances but playing up the electric, C. C. Turner, one of the principals in

Maine Gas and Appliances, Inc., sponsors of the convention, outlined three principal messages to his hearers:

1. Stop being the stooges of the power interests. Throw electric appliances out of your places of business. Cease being "Cicero Sapp, the Gas Man."

2. Raise your sights. Stop thinking of the gas business in the terms of large profits on small volume. Think of it in its coming phase, the business of small profits on large volumes.

3. Overhaul your operating methods. Cut out inefficiency. Get ready for the deluge of heating and automotive business which is coming your way.

Mr. Turner related some astonishing facts having to do with infiltration of electric influence in key spots in the state of Maine, and urged his hearers not to take this sort of thing lying down.

"I cannot say that certain legislative bills are being sponsored by the electric industry," said Mr. Turner. "But I can say that our governor is an ex-electric company employe . . . and that some of those who are introducing bills have had or still do have electric company affiliation. The effort is being made to tax you, regulate you, restrict you out of existence."

The three-day program brought together Maingas dealers and servicemen. Representatives of manufacturers attended and put on demonstrations with their actual appliances and equipment on how to service. The third day was largely given over to sales.

M. B. Gault, Robertshaw Thermostat Division, discussed, "The Why and How of Thermostats"; George Black, of The John Wood Co., "Servicing and Installing Water Heaters"; and Adam Johnstone, of The Bastian-Blessing Co., "Keeping Away from Regulator Troubles." Joseph Falk of Gas-Kit Co., Glastonbury, Conn., discussed "Proper Tools for Your Service Man."

A live demonstration of how to sell gas ranges, including practical hints on how to show superiority of gas to electric was presented by Arthur M. Newman, sales manager of The Glenwood Range Co. Dewitt P. Sixbey, of Detroit-Michigan Stove Co., gave a practical talk on selling the commercial load; J. H. McPherson, owner of J. H. McPherson Co., discussed "Your Opportunity in Heating Sales."

Associations

Indiana

The first annual convention and trade exhibit of the Indiana LP-Gas Assn. is scheduled for Feb. 7-8 at the Antlers hotel, Indianapolis, according to Harold TenBrook, convention committee chairman.

Sub-committees and their chairmen include: entertainment, R. P. Hedback; trade show, J. P. Crowden; registration, T. K. Holden; welcome, C. W. Link. Mrs. T. M. Feely, wife of President Feely, is chairman of the ladies entertainment committee.

The latter day of the meeting has been designated as Kentucky day in recognition of industry members in that state who have assisted in the organization of the Indiana group.

Kansas

At the annual fall meeting, Oct. 30, of the Kansas LP-Gas Assn. A. C. Ferrell, Atchison, was elected president to succeed G. M. McClellan, Salina. Other new officers are Rex Wheeler, LaCrosse, vice president;



Leaders of the Kansas association are (left to right, front row): G. M. McClellan, retiring president; A. C. Ferrell, new president; S. G. Darling, director. Back row: Robert Tanner, district secretary; Glen McGuire, director; and William Hettie, director.

and Ha
tary-tre
district
More
meeting
view h
talks b
Co., "I
William
ing Co
Voice,
Fuel
paper
issue).
New
Guire,
Franci
terms
City;
Hettic
lan.
A m
spons
follow
Bob
tary
which
that t
short
LP-G

Loui

Lic
from
endor
their
to a
amer
26.

M
the
scrib
pres
shat
enfo
agre

cons
Nov

DEC

and Harlan Tatge, Herrington, secretary-treasurer. Robert C. Tanner is district secretary.

More than 100 persons attended the meeting which was held at the Broadview hotel in Wichita. They heard talks by Lee A. Brand, Empire Stove Co., "Future Appliance Production"; William A. Blees, Avco Manufacturing Co., "Retail Selling"; and E. W. Voice, Warren Petroleum Corp., "The Fuel Production Outlook." (This paper is reproduced elsewhere in this issue).

New directors named are Glen McGuire, Iola, and A. H. Clark, St. Francis. Directors serving unexpired terms are Frank Groves, Arkansas City; S. G. Darling, Pratt; William Hettic, Liberal, and George McClellan.

A manufacturer-distributor-supplier sponsored "friendship hour" was held following the business sessions.

Bob Tanner, LPGA district secretary of the Central States District, which includes Kansas, announced that the Kansas state association has shortened its name to the "Kansas LP-Gas Assn."

Louisiana

Liquefied petroleum gas dealers from all part of Louisiana gave full endorsement to stricter regulation of their industry and urged the public to adopt a proposed constitutional amendment to accomplish it on Oct. 26.

Meeting in Alexandria, members of the Butane-Propane Institute subscribed to the statement of their president, Frank Roberson of Coushatta, that "good laws and strict enforcement are good business," and agreed to work for the passage of constitutional amendment No. 20 on Nov. 7.



KEITH JONES



C. W. GUY

Other speakers at the one-day meeting included C. A. Breen of New York City, manager of the liquefied petroleum gas division of Esso Standard Oil Co.'s marketing division; Keith E. Jones, director of the Louisiana liquefied petroleum gas commission, Baton Rouge, and Charles W. Guy, Baton Rouge, representing the General Gas Corp.

Mr. Roberson also introduced L. N. Semon, Shreveport, commission member, and George Jacobs, Alexandria, manager of the Louisiana Butane-Propane Credit Assn.

Discussing the proposed constitutional amendment, passed during the last regular legislative session, the association president declared that it would benefit both the public and liquefied petroleum gas dealers by strengthening the power of the commission to enforce high safety standards.

Minnesota

Minnesota dealers met Nov. 6 at the Curtis hotel in Minneapolis for the annual meeting of the Minnesota Petroleum Gas Assn. Last year's president, L. H. Dow, presided. Other

NEW MINNESOTA OFFICERS

President: Charles Bubar, Northwest Hydrogas Co., New Brighton.

Vice President: John L. Locke, Northwestern Blaugas Co., St. Paul.

Secretary-Treasurer: Hilder M. Hoaglund, Allied Gas, Inc., Minneapolis.

NEW MINNESOTA DIRECTORS

Charles Tenney, Willmar.

H. A. Andersen, Minneapolis.

L. H. Dow, Duluth.

A. D. Palcich, Austin.

H. L. Brownell, Hibbing.

George Mattaini, St. Peter.

outgoing officers include M. G. Ostgaard, vice president; A. W. Kyndberg, treasurer; and John L. Locke, secretary.

Speakers included B. A. Brokaw, chief, petroleum division, Dept. of Taxation, whose talk was entitled "LP-Gases and Taxation as Motor Fuel." M. A. Ennis, Cribben & Sexton Co., spoke on "There is Something Extra in a Flame."

Following afternoon business sessions and committee reports, an open forum was held covering safe practices, insurance, employe training, the heating load, electric competition, cooperation with state authorities, fair trade practice, and accounting.

Mississippi

T. R. Ewing, president, presided at the semi-annual meeting of the Mississippi LP-Gas Assn. held at the

Heidelberg hotel in Jackson, Nov. 5-6.

Dealers heard addresses by Ralph Townes, Rheem Manufacturing Co.; John Allen, director, liquefied compressed gas division, State of Mississippi; and Fielding Wright, governor of the state.

Open forum, business sessions, reports of committees, and election of officers were held prior to the open house and banquet at which Clayton Rand was speaker.

Nebraska

Carl A. Nelson of Omaha has been elected president of the Association of Nebraska Liquefied Petroleum Gas Dealers, succeeding Roy Pearson, of Holdrege. He was elected at the annual convention and trade show held at the Hotel Paxton in Omaha, Oct. 29-31, according to Fremont Meyers, who was re-elected executive secretary.

Other new officers are R. L. Warren, Crawford, first vice president; Veryl Storer, Ogallala, re-elected second vice president; Ralph Hawkins, Hebron, re-elected secretary; and Victor E. Anderson, re-elected treasurer.

Between 175 and 200 dealers, distributors, and manufacturers attended the convention which offered addresses by E. Q. Beckwith, Sid Richardson Gasoline Co., speaking on "LP-Gas Supply Outlook"; C. A. Nelson, C. A. Anderson, Inc., "Business Possibilities of Motor Conversions"; and Dana F. Cole, professor of accounting, University of Nebraska, "LP-Gas Pricing and Accounting." A safety forum was held under the direction of Wendell Groth, Mid Century Insurance Co.

Ohio

Meeting at the Fort Hayes hotel in Columbus, the Ohio LP-Gas Assn. held its fall meeting Nov. 8-9, according to President George Gray.

Highlights of the 2-day meeting included talks by O. J. Haagan, Tappan Stove, on "LP-Gas and the Appliance Manufacturer" and Vernon Beals, Beals Advertising, who discussed advertising and promotion. Several films were presented by Karl Berquist, of Fisher Governor Co. T. C. Johnson, association vice president, was moderator of a round-table discussion of industry problems.

Presidents of neighboring state LP-Gas associations were invited to participate in the meeting and the social hour on Nov. 9 which was sponsored by the associate members of the association.

Texas

Announcement has come through C. D. Ribble, president of the Texas Butane Dealers Assn., that the Texas group will expand its annual June trade show to include exhibits from four other states.

New Mexico, Colorado, Oklahoma, and Louisiana have been declared in as participants in all future trade shows. This will make the new trade show, to be known henceforward as the Southwest Butane Exposition, by far the largest LP-Gas regional trade exposition in the nation. Actually, the annual trade show put on for Texas only was already the largest regional one.

Plans for expansion, according to Mr. Ribble and trade show chairman L. D. Lowry Jr., came as a result of continuing demand by out-of-state visitors to the show, by manufacturers, and by distributors and refiners. The Texas show had always attracted

much interest in neighboring states, Mr. Lowry pointed out.

The 1951 event, which will be held in connection with the annual convention, and which will include participation of the neighboring states for the first time, will be housed in the entire top floor of the Hotel Texas in Fort Worth. A committee headed by Mr. Lowry and including Aaron Smith, M. W. Lawless, J. E. Persons, R. L. Moore, and Emory Kelley expects to have formal announcements of plans for the show ready for distribution soon. The dates will be June 13-15, inclusive.

American Petroleum Institute

More than 5000 oilman gathered in Los Angeles last month for the 30th annual meeting of the American Petroleum Institute. The meeting, Nov. 13-16, was split between the Ambassador and Biltmore hotels.

Leaders of finance, industry, and government addressed delegates to the meeting. Secretary of the Interior Oscar Chapman was on the speakers' roster, as were Benjamin F. Fairless, president of United States Steel Corp., and Colonel B. S. Mesick, U. S. Army, who discussed probable military requirements of petroleum and petroleum products.

Others who addressed conventioners were API president Frank M. Porter; Reese H. Taylor, president of Union Oil Co. of California; Jake L. Hamon, president of Mid-Continent Oil & Gas Assn.; and Gustav Egloff, Universal Oil Products.

CNGA

The Ambassador hotel, Los Angeles, was the scene of the silver anniversary meeting of the California Natural Gasoline Assn. Nov. 9-10. A program of technical forums and papers pertinent to the natural gaso-

line industry was presented, according to E. R. Millett, Jr., secretary of the CNGA.

R. S. Tulin, president, dedicated the 25th anniversary program to the 40-odd men who attended a general meeting held on Dec. 2, 1925, at Signal Hill to provide a common meeting ground where those interested might discuss mutual problems and cooperate in their solution, and out of which meeting developed the present California Natural Gasoline Assn.

Cumberland and York

Twenty-six members of the Cumberland and York Propane Assn. met last month in York, Maine, it was reported by Ray Stengel, president. It was a combination dinner-business meeting, at which President Stengel acted as chairman.

Speakers who appeared on the program included Elmer Ring (Yarmouth, Maine) and George Kelley (Portland, Maine), who spoke on new weights and measures regulations and on progress at the industry technical schools at Southern Technical Institute and the University of Bridgeport; Jim Day (Kennebunk, Maine), who reported plans for dealer cooperation in the civil defense program; and Larry Holman (Portland), whose topic was the National Committee for LP-Gas Promotion.

Unanimous approval by the membership was given to a resolution that all space heating installations made in public places and overnight cabins, should be properly vented and have 100% safety shutoff.

Heating, Ventilating Engineers

Following are nominees for 1951 officers of the American Society of Heating & Ventilating Engineers:

Lauren E. Seeley, University of New Hampshire, president; Ernest Szeke-ly, Bayley Blower Co., 1st vice president; Reg F. Taylor, consulting engineer, 2nd vice president; Howard S. Sproull, American Blower Corp., treasurer.

Officers will take office at the society's 57th annual meeting in Philadelphia, Jan., 22-25.

CALENDAR

1950

Dec. 6-7—LPGA Board of Directors. Camel Back Inn, Phoenix, Ariz.

Dec. 8—Liquid Gas Dealers Assn. of California Board of Directors. Stockton Hotel, Stockton.

Dec. 8—NGAA Regional Meeting. Herring Hotel. Amarillo, Texas.

1951

Jan. 17-18—National Butane-Propane Assn. District Meeting. Mayflower Hotel. Washington, D. C.

Jan. 21-23—2nd Annual Kansas Engine Fuel Service School. Manhattan.

Jan. 22—Arkansas Butane Dealers Assn. Mid-Year meeting. Little Rock.

Jan. 22-25—American Society of Heating and Ventilating Engineers. Philadelphia.

Feb. 7-8—Indiana Liquefied Petroleum Gas Assn. 1st Annual Convention and Trade Exhibit. Antlers Hotel. Indianapolis.

Feb. 23—NGAA Regional Meeting. Settles Hotel. Big Springs, Texas.

Mar. 26-28—LP-Gas Service School. University of Minnesota. Farm School. St. Paul.

Mar. 29-30—New England LP-Gas Assn. Annual Meeting. Hotel Statler, Boston.

April 16-18—Gas Appliance Manufacturers Assn. Annual Meeting. Drake Hotel. Chicago.

April 25-27—NGAA. Mayo Hotel. Tulsa, Okla.

May 7-10—LPGA Annual Convention & Trade Show. Stevens Hotel. Chicago.

June 10-12—Arkansas Butane Dealers Assn. Annual Convention and Trade Show. Little Rock.

June 13-15—Texas Butane Dealers Assn. Annual Convention & Trade Show. Hotel Texas, Fort Worth.

Oct. 15-18—American Gas Assn. Annual Convention. St. Louis, Mo.

MR. LP-GAS DEALER: ARE YOU INTERESTED IN...

A simplified plan for handling installment paper under Regulation "W"?



LPG CREDIT CORPORATION PROVIDES SIMPLIFIED PROCEDURE, FORMS AND COMPLETE INSTRUCTIONS FOR HANDLING INSTALLMENT SALES

Thorough study reveals that LP-Gas dealers can still make 1951 a big year. The complete financing plans offered by the LPG Credit Corporation can help make the difference between real success... as against a moderate year of business. We invite you to investigate our complete financing service which includes a field tested sales promotion program.

4 BASIC PLANS ARE OFFERED

- ① RETAIL INSTALLMENT FINANCING** of appliances and gas systems.
- ② FLOOR PLAN** for financing inventories of appliances and containers which are purchased by the dealer for resale to customers.
- ③ FINANCING OF CYLINDERS AND TANKS** for dealers leasing systems to retail customers.
- ④ FINANCING OF BULK STORAGE TANKS AND DELIVERY EQUIPMENT.**

LPG

Inquiry on your company letterhead is invited.

LPG CREDIT CORPORATION

312 EAST 131st STREET

CLEVELAND 8, OHIO

NBPA District Meeting Set for Washington, D. C., Jan. 17-18

The January district meeting of the National Butane-Propane Assn., originally scheduled for New Orleans, has been changed to Washington, D. C., where discussions will be devoted to the setting up of the group's National Affairs committee. Meeting place will be the Mayflower hotel, Jan. 17-18.

Action of the committee, the result of resolutions passed at the September meeting in Cleveland (see November, *BUTANE-PROPANE News*), will center around the appointment of sub-committees, determination of programs, and plans of action. Forrest Fram has been appointed chairman.

According to Al Hadlick, executive vice president, prominent speakers are being lined up for the two-day meeting.

Texas Dealers Tell Story To State Fair Visitors

The Texas Butane Dealers Assn. went to the state fair this year—and members are still talking about the success of the association's exhibit there. An estimated 1,000,000 passed by the 30-foot exhibit.

The display was cooperatively financed by manufacturers, refiners, distributors, and association members. Texas dealers manned the booth throughout the fair's 16-day run.

"The Magic that Lives in the Tank" formed the theme of the display. A 16-foot replica of a butane tank was constructed with three windows in the tank's length. The magic in the tank told the butane story: each of the windows held colored slides and legends about the big uses of LP-Gas. The first window described butane's

uses as a domestic fuel; the second window explained the fuel's role in modern agriculture and breeding; the third showed the many industrial applications of butane.

Above the tank was a 20-foot sign that read: "BUTANE—The Modern Fuel Beyond the Gas Mains." On each side of the tank replica, panel maps were set up, one showing the number and location of Texas Butane Assn. dealers; the other showing location of the more than 225 refineries that produce butane and propane in ample quantities to meet almost any demand.

Each person who stopped at the booth was asked to fill out a registration card with his name and address and pertinent information about his fuel problems: What kind of fuel do you use? Do you have a butane system? Would you like to know more about what butane can do for you?

Registrants were eligible for a drawing on the last night of the fair, when a complete set of Revere copper kitchenware was presented to the winner.

CNGA Issues Bulletin On Test Procedure

A new bulletin, "Tentative Standard Procedure for the Determination of Carbon Dioxide and Oxygen in Natural Gases," has been completed by the California Natural Gasoline Assn., according to A. C. Lyles, chairman of the technical committee.

Designated Bulletin TS-501, it is intended as an operating manual for the analyst—in the field and in the laboratory. It includes test procedures for laboratory and field determinations.

It is available from the CNGA at 510 W. 6th St., Los Angeles 14. Price for members is \$2; for non-members \$2.50.

GAUGE YOUR BUSINESS

with these **VISIBLE** products



MASTER VISIBLE GAUGE

For LP-G and Anhydrous Ammonia

Full 8-inch dial face. Positive operation in low specific gravity liquids.



SENIOR VISIBLE GAUGE

Top, Side, Angle or End Mounting

For LP-G above and below ground cylindrical and spherical tanks and applicable cylinders.



JUNIOR VISIBLE GAUGE

Top Mounting Only

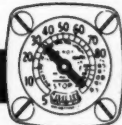
For LP-G above and below ground cylindrical and spherical tanks and applicable cylinders.

ANHYDROUS AMMONIA GAUGES FOR SMALL TANKS ALSO AVAILABLE



We are also sectional Representatives of-

- ★ FISHER GOVERNOR COMPANY
Regulators, Assemblies and Manifolds
- ★ SELWYN-LANDERS COMPANY
Valves, Fittings, Adapters and Accessories



SQUIBB

TAYLOR

INCORPORATED

1213 SOUTH AKARD STREET, DALLAS 3, TEXAS

Stock Tank Heaters Offer New Sales Possibilities

THE farmer's work load can be reduced considerably during freezing weather by the use of a gas stock tank heater. LP-Gas tank heaters have advanced through several stages of development and are now capable of doing a dependable and efficient job of replacing the home-made types of solid and liquid fuel burning heaters. Oil and wood burning heaters have been very unsatisfactory and some types have been fire hazards. Many farmers and ranchers, particularly in areas having few days during the year when running water will freeze, would rather chop through the ice than resort to troublesome types of tank heaters that leave oil and soot films on the water.

The sales possibilities of LP-Gas tank heaters are superior to any other type but since outdoor gas appliances are new it is important to educate both the serviceman and the user with several aspects that are not encountered with indoor appliances. Perhaps this can best be done by considering some of the unusual problems manufacturers have had to meet in the development of gas tank heaters.

Unlike an indoor heating appliance where the primary air is taken from an enclosed area of relatively constant pressure, the stock tank heater must draw air from an inlet that is exposed to the elements. Draft diverters normally used to protect vented appliances cannot be used outdoors because the diverter itself would become a high draft device or in some conditions would even result in back-draft.

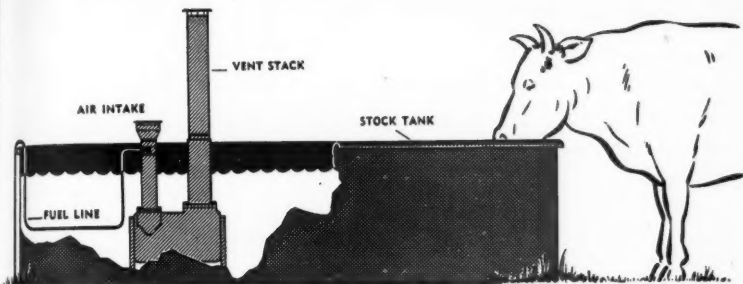
By **SHELDON MILLER**

President, Tesco, Inc., Tulsa, Oklahoma

Draft Control

Controlling the effect of winds on the air source and vent stack has been a difficult obstacle since air velocity changes so rapidly, especially in gusty conditions. One approach to this condition has been to keep the areas of the air inlet and the vent nearly equal so as to get a pressure balancing effect. Because back drafts can cause burner failure, it is customary to use some type of draft device, usually of a high-draft type. Although back draft can be controlled in this manner, high draft devices cause draft to increase rapidly with increased wind velocities and reduce heater efficiency when it is needed most—when weather conditions are most severe. A draft cap of a type that will control or tend to cancel the effect of wind on draft can be applied to both the air inlet and the vent to eliminate this difficulty to a large degree.

The height of the vent pipe, the location of primary air source, and the relation of the stock tank to surrounding areas and nearby buildings must also be given attention to keep efficiency high and eliminate heater failure. By keeping vent stack height to a practical minimum, stack heat loss can be minimized. Because the tank itself as well as other nearby objects can cause peculiar air currents, it is well for the air intake (see illustra-



Cutaway drawing to show "Tesco" stock tank heater installation

tion) to be several inches above the highest part of the tank so as to be omni-directional to the wind and be above normal snow drifts. Nearby buildings can cause troublesome air currents and where this difficulty is encountered it is due to the vent and air intake, each being exposed to a different air pressure. The closer the air inlet is to the top of the vent pipe, the more insurance there is of each being exposed to the same air pressure.

Burner and Heating Efficiency

The problem of attaining heating efficiency at a reasonable cost is quite different when transferring heat to a still liquid than is the case with rapidly moving air or a rapidly moving liquid. With the latter condition, a more rapid transfer of heat is had with a given temperature differential than is the case with a still liquid. It is therefore necessary in a stock tank heater to have a high temperature differential and/or large heating surface.

The blow torch type burner has a limited area of flame impingement but can be confined in a small cross section. The drilled port type burner can be designed to give a maximum of flame impingement but requires a

larger boiler or combustion chamber. Regardless of the type burner used, however, air and combustion gases should flow through the combustion chamber at reasonably low velocities because burners used in appliances generally are very sensitive to air velocities.

In this regard it is well to have the burner in a relatively large cross section which reduces the velocity of air which enters through a relatively smaller cross section. Of course, as indicated above, this velocity is further controlled by the use of suitable draft caps.

Heat Loss

Because the heat loss from the stock tank is a transfer of heat from the water surface or the tank sides to moving air, it is well to consider the degree of heat loss by noting typical losses* for conditions similar to that encountered with a stock tank. With a 50° temperature difference between the water surface and the outside air, there would be a loss of 100 Btu per hour per sq. ft. with zero wind velocity; this increases to 200 Btu/hr./sq. ft. when the wind veloc-

*Mechanical Engineer's Handbook, L. S. Mark

ity reaches about 10 miles per hour and to 300 Btu/hr./sq. ft. at a 25 mile per hour wind velocity. Average wind velocity, according to United States Weather Bureau records, is about 10 miles per hour in most areas of the country.

With an 8-ft. diameter tank this would mean a possible heat loss of 20,000 Btu's/hr., assuming an exposed area of nearly 100 sq. ft., a 10 mph wind velocity, and a 50° temperature differential. With a 30° temperature differential, this loss would be near 14,000 Btu/hr. with a 10 mph wind velocity.

Although these losses would be much higher with severe weather conditions, it is not necessary to have a heater capacity far in excess of this because in actual application in a stock tank, the heat distribution in the tank is not even, and the heat loss is highest in the portion of the tank nearest the heater. Where merely sufficient heat is desired to maintain a limited ice-free drinking area, the heating load is very much reduced.

Also to be considered is heater efficiency which is usually under 80% at best, and is reduced considerably where draft is not sufficiently controlled. From these considerations a reasonable understanding of the heating load and many of the influencing factors can be had.

Heat loss can and should be kept to a minimum by the use of a stock tank cover which can readily be constructed of wood, through which the stock tank vent and air source can protrude. With such a cover, the air velocity on the water surface can be reduced to zero, thus saving much heat that is otherwise lost. The cover can have removable sections or hinged sections which provide open water areas for access by the stock during the day and can be closed at night. A tank cover can also serve as a guard against the stock "nosing" the

heater itself which should be prevented by a guard in any case.

The foregoing information, though not all inclusive, can be helpful in the selling, installation and servicing of stock tank heaters. With but reasonable attention given to the installation itself, stock tank heating can be greatly simplified and accomplished at reasonable cost using an LP-Gas stock tank heater.

War-Time Controls For LP-Gas Men

Government orders which affect the LP-Gas industry are beginning to appear. Here are some of recent issue. They are extracted from a recent LPGA bulletin.

Financing Controls (Regulation W):

By an amendment effective Oct. 16 the Federal Reserve Board has tightened the restrictions on consumer credit. The regulations covering appliances, including ranges, refrigerators and clothes dryers, have been amended to require a 25% downpayment and 15 months maximum maturity. The regulation has also been amended to cover all items costing more than \$50.

Defense Transportation Administration:

The Defense Transportation Administration was established by an order of Oct. 4, issued by ICC Commissioner James K. Knudson, Emergency Transport Director. This administration will consist of a small number of transport experts who will formulate emergency policy decisions. The various ICC Bureaus will be utilized for issuing orders to industries

SPECIFY

REGO SAFETY RELIEF VALVES

You get sure safety and maximum capacity with RegO Safety Relief Valves. They are designed to safeguard your LP-Gas containers by giving positive, two-way protection.

1. Valve opens slightly to relieve moderately excessive pressure.
2. If the pressure continues to increase and reaches a predetermined point, the valve "pops" wide open to the full discharge capacity; thereby reducing the excessive pressure quickly and safely.

When you install RegO Safety Relief Valves you get dependable and proven protection against the hazardous conditions which are created when . . .

- . . . Hydrostatic pressures are caused by overfilling
- . . . High pressures are developed due to the use of incorrect fuel
- . . . High pressures result from exposure of the container to external heat.

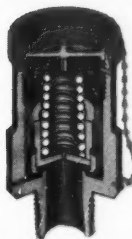
The RegO line of "pop-action" Safety Relief Valves is truly complete—there are ten types, available in a full range of standard settings for ASME containers of all types and sizes, as well as standard settings for use on ICC cylinders. See table at left for other applications.



No. 3135
SERIES



No. 3134
SERIES



Cutaway illustration of a typical RegO "pop-action" Safety Relief Valve. Restriction-free outlet passage provides full discharge.

Bodies are heavy forged brass. Seat discs are special composition which fully resists the action of LP-Gas, and are resilient to assure leaktight closures. Springs are stainless steel, except on No. 3134 series where spring is not exposed to atmosphere after valve is installed.

Piping Discharge Away from Relief Valves is provided by RegO adapters. These are used to connect piping to the safety relief valve, and are available as extras.

Rain Caps and Extension Tubes provide: (1) added protection against rain and dirt, and, (2) short discharge tubes. These are available as standard accessories.



REGO
LP GAS EQUIPMENT
Stocked by These Distributors
GAS EQUIPMENT CO.
Dallas, Texas
GAS EQUIPMENT SUPPLY CO.
Atlanta, Ga.
GAS EQUIPMENT CO.
of DENVER - Denver, Colo.
A. C. FINE, S. A., Mexico, D. F.
EMPIRE BRASS MFG. CO., LTD.
London, Canada

The **BASTIAN-BLESSING** Company
4301 West Peterson Ave. Chicago 39, Illinois

PIONEER AND LEADER IN THE DESIGN AND MANUFACTURE OF PRECISION EQUIPMENT FOR USING AND CONTROLLING LP-GASES

RegO is the registered trade mark of the Bastian-Blessing Co.

under its control. An industry consultant division will be established to act on emergency recommendations from various voluntary industry advisory groups. Divisions will also be formed on the subject of manpower, equipment and materials, domestic transport, storage and ports.

Military Specifications for Valves, Gas Cylinders:

Specifications have been approved by the Departments of the Army, Navy, and Air Force for use of procurement services of the respective departments covering valves, gas cylinders. This specification, known as MIL-V-2, dated June 15, 1950, supersedes Navy Specification 45V13f.

Attention is called to the fact that valves furnished to the Military under this specification shall be of a brand which has been tested and found to pass the qualification tests successfully as specified in the specification.

Manufacturers of valves who are interested in providing valves for the Military Services should communicate with the Office of Chief of Engineers, and arrange to have their products tested for qualification in order that they may be eligible to be awarded contracts or orders for the products covered by this specification.

Copies of the specification, as well as information pertaining to qualification of products may be obtained from the office of the Chief of Engineers, Department of the Army, Washington 25, D. C.

Defense Deferment Policies:

The LPGA has been advised by the Department of Commerce that it considers this industry's activities covered in the Department of Commerce's list of essential activities under major groups 13, 29, 49, 51, 57 and 59.

A joint board from the Department of Commerce and the Department of Labor have completed revision of the Department of Labor's list of essential skills with little modification. The Department of Commerce's list of essential activities is presently undergoing study by this same committee.

R. W. Dorst Named Secretary For LPGA West Coast Office

Appointment of Richard W. Dorst as West Coast secretary of the Liquefied Petroleum Gas Assn. is announced by Howard D.

White, executive vice president. He succeeds K. B. Jacobsen, who has resigned to accept a position as secretary-manager of the California Retail Hardware Assn.

A 1945 mechanical engineering graduate of the University of California, Mr.

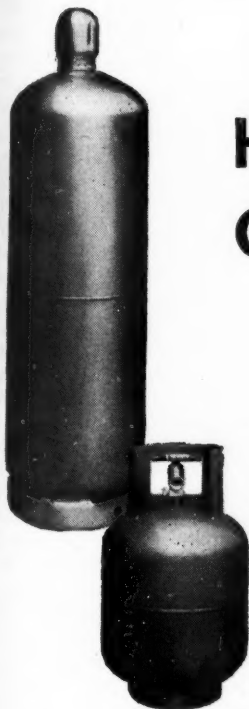
Dorst received a master's degree at Harvard Business School in 1948. Later that year, he entered the employ of Dewey and Almy Chemical Co., Cambridge, Mass., as sales engineer and he subsequently became assistant to the overseas vice president. During World War II he was an officer in the U.S. Navy.



R. W. DORST



The 25,000 cu. ft./hr. "Gasair" unit storage tank at Colusa, Calif. This unit, in operation since 1945, is owned and operated by Pacific Gas & Electric Co.



Here's the PROPANE CYLINDER for You!

Compare feature for feature and you'll decide to use PREST-O-LITE cylinders for liquefied petroleum gases—they are unquestionably the No. 1 quality cylinder. They lead the field because of their longer service life, light weight, uniformity of wall thickness, and superior design. You get the greatest overall saving. Sturdy PREST-O-LITE cylinders are backed by over 35 years of experience and skill in the development, manufacture and use of compressed gas cylinders.

Available in 20-lb. to 100-lb. sizes, with or without valves, and with any color finish. Other sizes or styles can be quickly made to your specifications. The ventilated foot ring practically eliminates corrosion around the bottom of the cylinder. PREST-O-LITE cylinders undergo many rigid tests far beyond I.C.C. requirements, such as testing for leaks with dry air after the hydrostatic tests. Mail the coupon today.

Prest-O-Lite
Trade-Mark

L-P GAS CYLINDERS
ARE YOUR BEST BUY

THE LINDE AIR PRODUCTS COMPANY

Unit of Union Carbide and Carbon Corporation
30 East 42nd Street **UCC** New York 17, N. Y.
Offices in Other Principal Cities
In Canada:

Dominion Oxygen Company, Limited, Toronto

The term "Prest-O-Lite" is a registered trademark of The Linde Air Products Company.

The Linde Air Products Company
30 East 42nd Street
New York 17, N. Y.

LP-15

Send full information about PREST-O-LITE cylinders for liquefied petroleum gases.

NAME.....

COMPANY.....

ADDRESS.....

Service, Safety, Sales

Part 5. Conclusion

Periodic Surveys

PARTICULARLY is the follow-up important in the LP-Gas distribution business. It is of added value for the reason that the first few years of growth of this business took place during a period when real selling was hardly necessary; when thousands of customers bought the gas and equipment and appliances necessary to the service without too much thought about what it all meant except that they wanted it and had the money to pay for it. By the same token, thousands of services were installed without too much regard for safety, service or durability.

For these and other reasons every salesman of LP-Gas and the equipment and appliances necessary to a completely satisfactory service, whether it be the expressed policy of his firm or not, should make it his policy, even on his own time, to make a regular canvass of his territory inspecting equipment and appliances, servicing them where too much time is not required, making notes and keeping a record of the kind, number and condition of all equipment, as well as additional

appliances he thinks the customer should have or be interested in having.

In any event, it seems agreed by leaders in all lines of industry and business, large and small, that selling is no longer merely a matter of having the goods, as it has been in the past few years. It now requires a greater degree of mental and physical alertness, stamina, enthusiasm, "know-how" plus "know-why," and careful adherence to all the known rules and experiences of selling and salesmen to accomplish anything approaching the same progress in the LP-Gas distribution business than it has at any time in its past history. For this reason, if no other, the value and the necessity of the follow-up cannot be stressed too much. It may mean the difference between success and failure in many instances, and, always remembering that "no sales argument is as effective as a satisfied customer."

Sincere enthusiasm is a prime requisite of successful selling. Enthusiasm for one's product and the service it can render, but above all, enthusiasm for the firm you represent. Lacking this enthusiasm, you are but a mere representative, not the salesman you must be if both your employer and you are to profit from your efforts.

By KEITH CLEVENGER

BUTANE-PROPANE News

Many a salesman has been faced with a situation where enthusiasm for his firm "saved the day," and made the sale. The product or service, the price and the terms of his competitor were on an equality with those of his firm, but the sale was stalemated. His enthusiasm for his associates and superiors, alone, enabled him to hold the attention and eventually secure the buying decision.

So carry a good stock of enthusiasm for your firm and its service at all times. It pays real dividends.

"You're Right, Mr."

You have met, and will meet in the future, many people who pride themselves on being "original think-

ers"—good folks who are hard to sell except on their own ideas. The problem in such an instance is how to direct the sales presentation along lines that will lead such a prospect to feel that he is thinking the matter through in his own way.

Answering an objection, even though you have heard it many times, with the expression, "You're right, Mr. ———. I never thought of it in just that way, but there is surely some way we can work it out in line with your ideas. After all, our firm wants to do business with you the way you want it done."

This might be called "retrieving" a presentation. From here, if your prospect is properly impressed, you can start all over again and reason the matter out in his vein of thinking. This procedure will make it so evident that you are following his reasoning—that he has "shown you

**"Enthusiasm
is vital."**



the light"—that he will agree to your proposition with the impression he has really "told you something" about your own business.

No Failure in Selling

Remember, there is no such thing as failure in selling. Somebody wins. Either you sell your prospect on the idea that he needs your product or service, or he sells you that he does not. Or, possibly your competitor profits from your failure.

Be Clear

Be certain that your presentation is so simply and clearly made that there is no opportunity for misunderstanding. Plain Anglo-Saxon words will do it—extra flourishes only serve to confuse and cause suspicion.

Be sure to be accurate. Use your prospect's correct name, and, if you have occasion to write it, write it as he does, exactly. It is his name, and he is just as proud of it and particular about its proper use and spelling as you are about your name.

Be Observing

Many a profitable sale has been picked up because of the ability to be observing.

We recall an instance of an LP-Gas truck driver-salesman who missed the opportunity of making as much in commission on one call as his entire day's pay for delivery work, as the result of not being alert and observing.

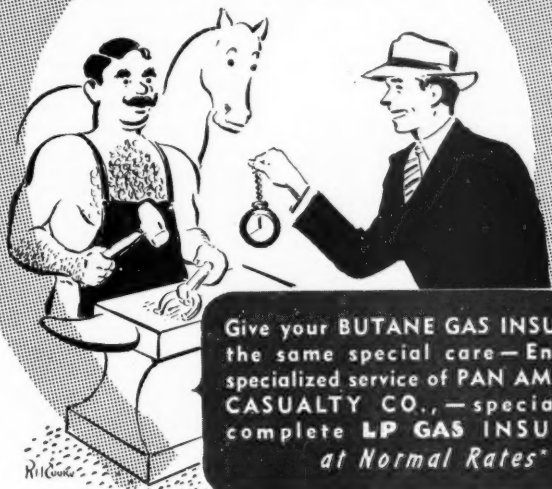
In the first place, he over-filled the customer's storage tank, which was a violation of delivery rules. This necessitated a 54-mile round-trip by the firm's safety-service man. While the latter was correcting the error of the truck driver he learned through conversation with the customer that she was in the market for a furnace installation. He made a survey of the house, recommended a certain type and make of equipment and received the order.

SELL SERVICE!

"Price," alone, is the poorest sales argument in the world. It opens the door to the sale of inferior merchandise and the salesman who relies on it falls short of his own possibilities, reduces his opportunities, and, in the final analysis, loses the respect of the "price" buyer.

Selling at prices that assure quality production, proper deliveries, and dependable service to all customers at all times is the only selling that will increase the business of your firm and assure your customer of a continuing and trustworthy source of more such products and service. If the buyer is not interested in these advantages his business is not worth having.

You wouldn't carry your watch
to a **BLACKSMITH**...



Give your **BUTANE GAS INSURANCE**
the same special care—Enjoy the
specialized service of **PAN AMERICAN
CASUALTY CO.**,—specialist in
complete **LP GAS INSURANCE**
*at Normal Rates**



Have your local insurance agent write
for information about our . . .

- Complete and comprehensive coverage . . . for
- adequate limits of liability . . . at
- normal rates . . . with
- specialized safety engineering and claim service.



* RATES ESTABLISHED BY YOUR OWN STATE INSURANCE DEPARTMENT

PAN AMERICAN CASUALTY COMPANY

ARIZONA - ARKANSAS - KANSAS - LOUISIANA - NEW MEXICO - OKLAHOMA - TEXAS

HOME OFFICE 4001 TRAVIS STREET, HOUSTON, TEXAS
DECEMBER — 1950

Bottled Gas Ends Wood Chopping For Canadian Farmers

By PHIL GLANZER

FOLKS living back of the town line and summer cottagers holidaying far from gas mains and hydro lines are throwing away their axes and allowing their woodpiles to rot, thanks to new developments in the Canadian oil business. Fuel now is being delivered to many of them in bottles, easily hooked up to stove, boiler or refrigerator.

This emancipation from a traditional rural chore stems from the expansion in Canada of an industry which in the United States has multiplied almost 50-fold over the past 15 years—the manufacture of liquefied petroleum gas.

It's not hard to see why demand for this baby of the Canadian petroleum industry is growing by leaps and bounds in areas beyond the end of the big gas mains. From almost zero in 1945, the number of rural domestic customers has jumped to over 35,000 in Canada. This is just a drop in the bucket, officials say. Many times that number would be users if the gas and distribution facilities were available. Consumption rate in Canada is expected to parallel that in the United States, where number of domestic consumers leaped from 5000 to 6.5 millions in 20 years. A market research made recently by a Hamilton company indicates over 600,000 potential family users in Ontario, alone, beyond the gas mains.

Although bottled and introduced for the first time to the domestic market just before the war, scarcity of steel cylinders and gas ranges during the war deferred its full-scale exploitation in Canada until 1947.

An average family will consume about four or five of the 100 lb. cylinders of gas a year for cooking alone. If water heating, refrigeration, or even space heating is added, consumption may double or even treble, but costs do not increase proportionately since gas rates are often on a sliding scale according to volume. Average cost to the average rural family user in Ontario works out around \$9 a cylinder; or about \$3-\$3.75 a month for cooking purposes.

Cost to the large-scale industrial user—and this is still the biggest market in Canada—is much lower.

Though officials see the great, virtually untapped rural areas of Canada as affording almost unlimited market potential in the years ahead, the biggest selling stress at the moment is on those areas not served by, but adjacent to, gas pipelines—suburban, merging-into-country areas. Residents of these areas are acquainted with what gas can do and are easiest to sell. The distribution problem isn't as difficult either.

This is one big reason why officials aren't too worried by the indicated large-scale construction of natural gas pipelines in Ontario and Western Canada over the next few years. These lines will tap urban markets and at the same time help to stimulate sale of propane in rural areas, they think. Although increasing rural electrification programs pose a big competitive threat, propane salesmen find

a continuing high demand for their product for cooking in electrified areas, as well. Most of Imperial Oil's recent propane market in Ontario has been in electrified areas.

Up to 1947 biggest market expansion had been in Alberta where there already existed some familiarity with gas as a fuel because of the adequate local supplies and also because of very heavy usage of the product in the border states of the United States.

One Plant Has Big Production

The first and largest propane recovering plant in Canada—that of Western Propane Limited, in Turner Valley—has a daily production capacity of about 20,000 imperial gallons. It has been in operation only since 1948. Imperial Oil's new \$6-million gas conservation plant in the Leduc field, Alberta, was scheduled for production in August and will turn out both propane and butane gases recovered from producing oil wells. Domestic market expansion in the Ontario area has been rapid since spring, 1947, when Imperial Oil established propane service in the Toronto and surrounding areas. Both Shell and British-American Oil are active mainly in the utility and industrial market.

Up to this year most of the propane has been imported from the United States—from 3.7 million gallons in 1942 this had risen to an estimated 65 million gallons in 1948, mostly for industrial and utility markets.

A new Imperial Oil liquefied petroleum plant at Sarnia is expected to make available larger quantities and greater development in the Ontario rural market. Quebec and New Brunswick both report rapid strides in expansion of propane sales in the domestic market. In predominantly rural Saskatchewan one company alone—

Hugh Gas Ltd.—has 200 dealers established throughout the province. The company reports sales expanding steadily and outlook is bright.

Industry is an increasingly important user of propane. It is estimated that industrial and utility applications account for about 75% of the total consumption in Canada. One baking plant on the outskirts of Toronto is using as much as would supply a town of 15,000 to 20,000 people annually. Here absolute uniformity of heat is an all-important factor. In glass works, steel mills, ceramic plants, and textile mills, use of propane gas is expanding rapidly. National Propane Co., Hamilton, Ont., and its subsidiary, McLean Gas Products Ltd., is one of the largest suppliers in bottled form to the industrial market.

A growing number of gas utility companies in Canada are using propane gas to supplement their own inadequate supplies of manufactured gas. In these cases the high burning quality propane gas is usually mixed with air, then in turn mixed with manufactured gas and distributed through existing gas mains. Union Gas Co. of Canada has been using propane for several years to help satisfy high customer demand in winter months. This past winter, Consumers Gas of Toronto installed 16 storage tanks with capacity of 400,000 gallons of propane. This, mixed with the company's own gas, will bring daily peak load to 35 billion cubic feet.

The use of propane as an automotive fuel is creating considerable interest among commercial vehicle users in Western Canada. Already, more than a score of trucks in Alberta have been converted to this type of combustion, and a bus of the Edmonton Transit System has been operating on propane for several months.



Making Collections Without Making Enemies

By ERNEST W. FAIR

THERE was once a standard collection practice of scaring the lagging debtor to the point of near apoplexy, recognized as the best and surest method of collecting slow accounts. Threats of violence and of turning loose the long-fanged hounds of the law were commonplace.

Today the LP-Gas dealer who tries such collection methods will lose the good will that is the bedrock of his business. A sound collection policy,

It was once standard collection procedure to scare the lagging debtor to a point of near apoplexy.

on the other hand, is the side-kick of good selling and will create satisfied customers, new friends, and increased sales.

Collections are once again a problem and they may get tougher in the days ahead. Dealers throughout the country have devised methods to handle this problem and from these methods now being used successfully, have been selected 12 points on "how to collect without getting tough."

Both the dealer and his salesmen should have a knowledge of these procedures. Together they should discuss each account and determine the course of action.

1. Understand the account first.

This is the advice offered in every instance. There are many reasons why people fail to pay their accounts. Good collection procedure calls for first finding out the reason for the failure to pay and then taking steps adapted to that reason.

2. Convert open accounts to installment contracts. Customers who have been large buyers on open accounts and who have always met their bills may suddenly find themselves with reduced incomes and unable to meet a large accumulated debt. Whenever possible, depending upon the nature of the goods sold, a suggestion should be made that an installment contract (which can be sold at a bank or finance company) would be the way out of the current difficulty. The customers are usually agreeable.

3. Refinance high-payment contracts. Defaulted installment contracts calling for large monthly payments can be refinanced. The balance

Cash in!

Wilcolator's revolutionary
Oven-Reddy INDICATOR

for GAS RANGES
is all set to **STEP UP**
SALES for YOU



Now

you can offer gas ranges with oven-heat control that automatically signals when the oven is ready for use.

It's the hottest news in the range business!

With the development of Wilcolator's exclusive new "Oven-Reddy", gas ranges can provide the important preheat indication that proves a boon to busy cooks, veteran or novice . . . the feature that has hitherto been available only on electric ranges.

There's no longer any need to guess, reckon or "have a hunch" about a gas oven being sufficiently preheated. When oven heat reaches the cooking temperature called for by the dial setting, the Wilcolator

"Oven-Reddy" signals by lighting a pilot lamp. The result is easier operation for the cook, time saving and fuel saving too.

Here's a revolutionary gas range improvement that will appeal tremendously to every one of your prospects . . . a sales-clincher that will speed turnover.

Lighten your selling effort, and brighten your profit picture, by making sure your manufacturing sources supply you with ranges that are equipped with the new Wilcolator "Oven-Reddy" . . . the control that does a complete job.



precision cooking
at a touch
of the finger tips!

The Wilcolator Company

ELIZABETH, NEW JERSEY

due on such contracts can be cut down to small monthly payments over a longer period. This method keeps the customer happy, preserves his self-respect, and leaves the door wide open for future sales when the customer is in a better financial position.



When collecting, assume a friendly attitude—be personal.

4. Be personal in collecting. Form letters have many virtues and should not be discarded, but they have become so standardized that in many cases they mean nothing to the person who receives them. Taking the same collection letters and turning them into personal letters will increase their effectiveness.

5. Don't be afraid to ask for your money. Far too often it is felt that customers will be angered by personal requests for payment of slow

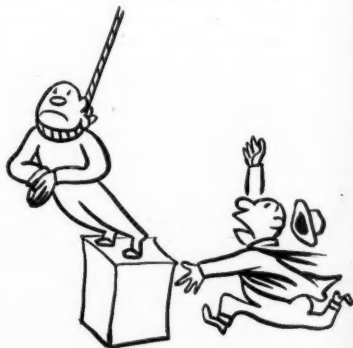
It is amazing how many people don't know the answers to the simplest credit problems.

accounts. Friendly requests for payment of bills seldom lose customers.

6. Help customers with their financial problems. It is amazing how many persons have no understanding of the simplest methods of getting themselves out of financial straits. Often the dealer or salesman can explain to such an individual how he can pool his bills in one bank or finance company loan on a monthly reduced payment basis. A little friendly discussion with a customer and a proposal of plans can win his good will and result in the eventual collection of his lagging account.

7. Attempt to forestall the "can't pay" time. This should be a definite part of every firm's credit program. If a customer can be kept from accumulating too large a load he will not be lost as a customer and a friend. Most salesmen know a good deal about their customers. Dealers have their own sources of information. When total obligations are out of proportion to ability to pay, it is time to adopt ways and means of handling that particular case.

8. Avoid half-way measures. The most fruitless of all collection methods is the half-way procedure. If a collection policy is decided upon for

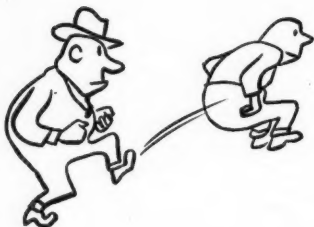




BRILLIANT FIRE Catalog No. 50 Lists *The Complete Line . . . Winter Air Conditioners, Forced Air Circulators, 3-Way Circulators, Lowboy Circulators, Little Giant Circulators, Radiant and Utility Heaters, Heat-Lite and Radiant Logs, Wall Heaters and the deluxe Gas-Coal Basket. Get your copy Now.*



If a collection policy is decided upon—
follow through!



certain individuals it should be followed through. Good collection procedures are firm and determined, never wishy-washy, and must always be designed to convince the customer that a statement, decision, or policy will always be backed up.

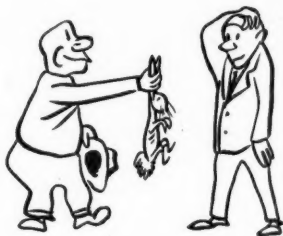
9. Appeal to the sense of fair-play in the debtor. Most Americans have an inborn sense of "fair play" and are loathe to take advantage of anyone else. A lot of slow-pay customers fall into this classification. The trouble is they never stop to think of how unfair their position is. Sometimes a personal appeal or letter playing up this point and bringing out the position in which the store is placed when accounts remain unpaid, will bring about a speedy settlement where other methods fail.

10. Use after-hours for collections. Difficult collections can be made in the evening when the problem can be discussed with both husband and wife in their own home. In some cases, "the boss" can collect more effectively than any member of his staff. Some people prefer to handle such things with the head of the firm.

11. Look for swap-out possibilities. One dealer collected an account from a customer who was an amateur man-

ufacturer of novelties in wood by displaying and selling some of his creations in the store until the account was settled. Another collected from a plumber by having him do a friend's job, collecting from the friend and crediting it to the plumber's account. Such an opportunity may exist where customers who are willing to pay, are unable to do so.

12. When legal collections are necessary, use the right agent. A friendly and understanding lawyer can collect much more successfully and is more likely to hold customers than the type who marshals all of the fearsome threats of the law. Some lawyers are gifted with the ability to collect accounts without making enemies. Search out that man in the community and let him do the collecting!



As a last resort, look for swap-out possibilities.

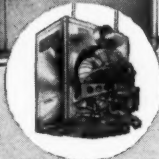
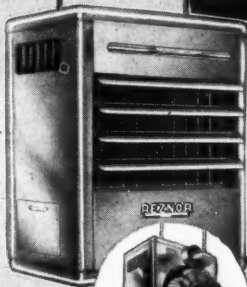
All of the foregoing suggestions are designed to speed collections and hold customers. The dead-beat of today can be the good-pay customer of tomorrow. Experience proves that it very rarely pays to "get tough" at collection time.

Experience also shows that an intelligent collection policy not only holds profitable customers but increases sales!

REZNOR

Hung from ceiling
or mounted on floor

*the World's Largest
Selling Gas Unit Heater*



**You'll have less
sales resistance
because IT'S BUILT
RIGHT AND PRICED RIGHT**

Give customers what they want, and you make sales. Reznor gas unit heaters do just that with graceful design, attractive finish, full automatic safety features, and easy serviceability. If you're not selling Reznor heaters today, write at once, or see your Reznor Distributor.

REZNOR MANUFACTURING CO.

4 UNION ST. • MERCER, PENNA.

Send me 20-page catalog in full color

Name _____

Firm _____

Address _____

City _____ Zone _____ State _____

Propane-Burning Tractor Performs For Iowa Crowd of 50,000

ONE of the largest crowds ever to watch LP-Gas-fired farm and construction equipment in action attended the national soil conservation field day at Zearing, Iowa, in September. An estimated 50,000 persons attended the event, at which a propane-burning Allis Chalmers WK track-laying type tractor assisted in the building of a dam on the Dakins farm, near Zearing.

Biggest feature of the day-long field day was the replacement of an old, erosive drainage system

on the big farm by a new dam that will conserve soil, aid irrigation of crops, and provide a lake and recreation area for Zearing citizens. The "Iowa Farm and Home Register" sponsored the field day, which annually receives national attention.

This year's show carried on the program's general aim to point up the economies of soil conservation, but greatest interest centered in the use of LP-Gas for power in the heavy duty tractor. The illustrations this year threw the spot-



Still exhibit of LP-Gas-burning tractors and farm equipment at the Iowa show which pulled 50,000 visitors.



A 2-cylinder installation on a track-laying tractor pulling heavy grading equipment.

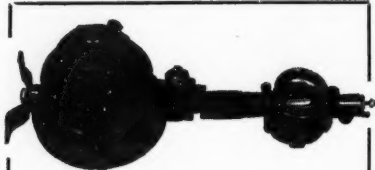
light on the Dakins farm, where ditch filling and seeding, terracing, tilling of soil, and building of new waterways and a dam were carried out in one day. In addition to the practical demonstration, a large display of new machinery and demonstrations of the latest harvesting and storage methods were held.

The face-lifting of the Dakins farm, including the construction of the 340-foot dam, regained about seven acres of tillable soil from what had been wasteland. The farm's annual income will be increased by an estimated \$1000

annually by the conservation measures taken.

Much of the work was accomplished by the Allis Chalmers tractor, owned and operated by John Knudsen, a contractor of Albion, Iowa, which is powered by propane furnished by Superior Supertane Co., Marshalltown. Valley Industries, Mt. Pleasant, Iowa, through Sales Manager Floyd A. Woollis, installed a Garretson carburetion system on Mr. Knudsen's tractor. Using propane, Mr. Knudsen has reported a saving of about 50 cents an hour in operating his tractor on LP-Gas.

Power



Mr. LP-Gas Dealer!

**\$5 Buys What
at DIX?**

*Write for full details,
it's to your advantage.*

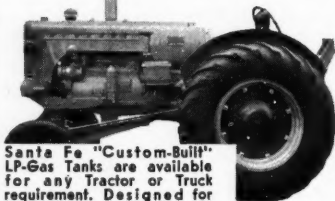
Dix Manufacturing Co.

3447 E. Pico Blvd., Los Angeles 23, Calif.

Export: 301 Clay St., San Francisco

Santa Fe "Custom-Built"

LP-Gas Tractor & Truck Tanks



Santa Fe "Custom-Built" LP-Gas Tanks are available for any Tractor or Truck requirement. Designed for fast, simple and inexpensive installation. Many stock models available, including brackets—others fabricated to specifications. Licensed and bonded in states where required. Tanks comply with N.B.F.U. requirements. U. L. approved valves—excess flow protection. Highest standards of engineering, materials, and workmanship.

Write for specifications and counsel.

**Santa Fe Engineering &
Equipment Co.**

3814 Fruitland Ave. • Maywood, Calif.

Valley Industries has recently added a new line of permanent tank-type installations using either vapor or liquid withdrawal for farm tractors, and Mr. Woollis sees the power market as one of the company's biggest LP-Gas sales potentials. The company is the distributor of the Garretson carburetor in 10 upper Mississippi states.

Power Notes

From many cities and districts over the country come reports of increasing interest in the use of LP-Gas for motor passenger buses.

The Kansas City (Mo.) Public Service Co. has announced it will convert about half of its fleet of motor buses to propane. Albert H. Wood, company representative, states that in the next few weeks 114 of the company's 288 buses will be changed over and that 30 new coaches, burning propane, will be added.

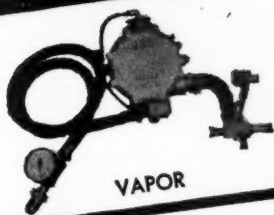
The San Antonio (Texas) Transit Co. has ordered 30 propane buses for delivery yet this year. In addition, 62 of its present buses will be converted.

The Kerrville and Continental bus lines are trying out propane for fuel on intercity Texas schedules.

Propane conversion of bus engines was a major topic at the Texas Motor Bus Assn.'s convention in Austin, Nov. 6-7.

The Hyde Hub City Lines, long time operators of LP-Gas buses in Aberdeen, S.D., report a savings on

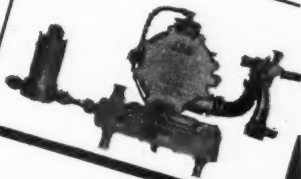
TRACTOR CONVERSION KITS



ONLY LPG VAPOR OR LIQUID SPUD IN CONVERSION

... with Economizer
automatically providing a lean,
economical mixture for medi-
um loads and rich, power-
ful mixture for
heavy loads.

LIQUID



Write for Descriptive Literature

J. & S. CARBURETOR CO.

2634 N. BECKLEY

DALLAS, TEXAS

L. P. Gas Conversions Since 1934

**FOR BETTER
PERFORMANCE**

Insist on



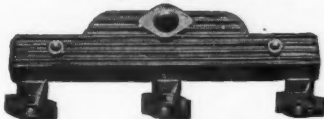
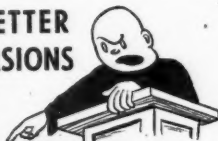
Carburetion Conversion Equipment

Stand-By Plants — Bulk Stor-
age Plants—Carburetion and
Conversion Equipment For All
Internal Combustion Engines.

AMERICAN LIQUID GAS CORPORATION

**1109 Santa Fe Avenue
Los Angeles 21, Calif.**

**FOR BETTER
CONVERSIONS
(TO L-P
GAS)**



Make every conversion a better in-
stallation by using an Ellis Manifold
designed especially for LP-Gas. Your
customers will find they get more
power and mileage . . . and you will
get more customers.

Ellis "Bu-Power" Manifolds have been
tested and proven by hundreds of suc-
cessful installations.

ELLIS MANIFOLD CO.

1708 S. Soto St., Los Angeles 23, Calif.

fuel costs of from 30 to 40% for operations during the last five years. There were also maintenance cost reductions totaling 15%. Number of buses used: 20.

The Capital Transportation Co., operator of the city bus system in Little Rock and North Little Rock, Ark., will put propane-operated buses on some of its routes. The company has ordered 15 propane motor coaches from the Twin Coach Co. and probably will convert 25 of the present fleet of gasoline buses to propane fuel. The new coaches will cost \$15,380 each.

Company engineers estimate that propane-operated buses will save approximately \$920 per coach annually in fuel costs in comparison to present gasoline-operated buses. The company will construct a 30,000-gallon bulk propane station at a cost of \$15,000.

The Transit Co., of Atlanta, Ga., announces that it has started a series of tests with a bus using propane.

The propane-propelled unit has already gone in regular service and will remain in use for a month.

If the test comes out like company officials expect, most of Atlanta's 136 gasoline buses will be converted to use the new fuel, John Gerson, vice president of the company, states.

Even S. C. McIntosh, Texas Railroad Commission director, is planning to convert his private car to LP-Gas.

Dr. Leonard Raymond, of the research and development department of Socony-Vacuum laboratories, told members of the Society of Automotive Engineers recently that rising operating costs in the bus industry, the availability of engines with higher compression ratios, and a ready supply of LP-Gas are all instrumental in arousing interest in the current trend toward conversions.

Chicago has installed 100,000 gallons of bulk storage for its new propane-powered buses. Other cities which have installed storage are San Antonio and Galveston, Texas; Omaha, Neb.; Wichita, Kan.; and Fargo, N. D.

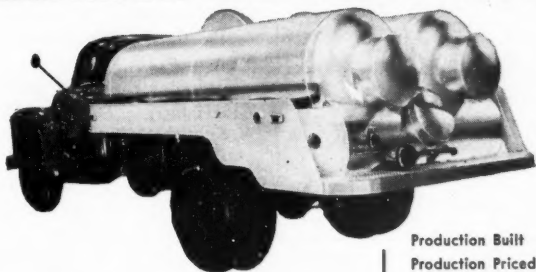
The Boyton Cab Co. in Milwaukee is starting to convert 279 of its Yellow taxis to propane (see story in last issue), and the Green Bay, Wis., Public Service Corp. has made the first changeover on a fleet of 60 buses.

The Galveston Transportation Co., Galveston, Texas, has recently installed propane gas systems in four of its city passenger buses. If these operate to the satisfaction of company officials, 16 more will be converted.



The advertisement features a central logo with the word "Cyclone" in a stylized script. Surrounding the logo are several components of the conversion kit, each labeled: "LP-Gas Regulator" (top left), "LP-Gas Lock-Off" (bottom left), "Dash Switch" (bottom center), "Carburetor Adaptor" (bottom right), and "Gasoline Lock-Off" (middle right). Below the components, the text reads: "INVESTIGATE! New CYCLONE conversion kit for LP-Gas or Gasoline. Can be used on any LP-Gas carburetion unit. Change is made by a flip of the switch from the dash. Cyclone Equip. Corp. 10600 Prairie Ave. Inglewood, Calif."

Deluxe Model Twin Barrel Truck Unit



These units are built on a production line basis and have satisfactorily met the needs of dealers in most states. Numerous companies have disposed of heavier equipment and have replaced entire fleets with this lighter weight unit.

As an additional service we are able to furnish most types of new truck chassis, usually at a saving. This enables a dealer to select a truck and tanks of his choice, completely equipped and ready to drive away. Two to three days is necessary for mounting tanks when truck chassis is furnished by the customer.

Production Built
Production Priced

Two Recessed Relief
Valves in Each Tank

Exceptionally Well
Balanced

No Frame Reinforcing
Necessary

Motor Fuel Tank in
Rear Well Protected

Minimum Weight

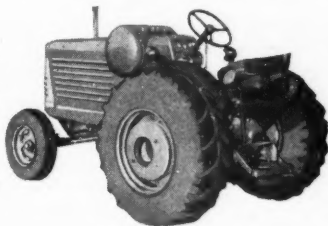
Maximum Pay Load
1250 to 1800 Gal.

*Prices and Complete
Specifications on Request*

TRACTOR TANKS

Oliver 88 Tractor Picture shows custom built tractor tank replacing gasoline tank. Tractor Custom tanks are complete with brackets and fittings.

Write for tank prices covering all popular models of tractor and motor fuel equipment.



Denton

North Texas Tank Co.

Manufacturers of Fine LP-Gas Equipment

P. O. Box 519 • Denton, Texas • Phone 146-1323

Motor Fuel Tanks • Domestic Tanks • Spheres • Truck Tanks • Tractor Motor Fuel Tanks



LP-Gas Filling Station Directory

Owners of LP-Gas filling stations all over the United States, Canada, and Mexico are urged to send information concerning their locations and services to BUTANE-PROPANE News, 198 S. Alvarado St., Los Angeles 4, Calif.

These names will be compiled later in book form and distributed to trucking firms and individuals who wish to patronize such filling stations. There is no charge for such listings.

Information furnished should include station name, street address or highway number, nearest town, owner's name, and kind of services offered.

NEW YORK

Peekskill

Burnwell Gas Corp.
Lower South St.—1 blk. S. Hwy. 9
K. Katzowitz, treasurer

NORTH CAROLINA

Fayetteville

N. C. Butane Gas Co.
15 A South
Open 8 a.m. to 5 p.m.

Graham

Green's Fuel Gas Service
W. Elm St.
Conversions; service
Open 24 hrs.
Night phone: 63777
James C. Swanner, owner

Sanford

Fenstamacher's Gemgas Co.
Hwy. 60—3 mi. N. of city

OHIO

Kent

Servagas Co.
E. Howe Rd.—RD No. 4
Conversions
W. H. Heasley, owner

PENNSYLVANIA

Harrisburg

Suburban Gas Service
Hershey Hwy.—Route 422
Phone: 4-1067 & 3-2823
B. B. Stroud

SOUTH CAROLINA

Estill

Estill Gas Co.
216 E./S. Railroad Ave.
Conversions
J. L. Peeples, owner

Sumter

James F. Burns Station
Hwy. 76
James F. Burns, owner

TENNESSEE

Chattanooga

Butane Propane Gas Co.
1930 Dayton Blvd.—Hwy. 27
R. W. Williams, owner
Natural Gas Service Co.
Compress St. off Manufacturers Rd.
Conversions; service
W. H. Cheney, mgr.

Cookville

Upper Cumberland Gas Co.
W. Spring St.—Hwy. U.S. 70N
Conversions; service
Open 24 hrs.
Paul G. Clark, mgr.

Goodlettsville

Trojan LP-Gas Co.
Hwy. 31E & 41
Cecil B. Nellessen, owner

Humboldt

American Gas Corp.
U.S. Hwy. 78
Conversions

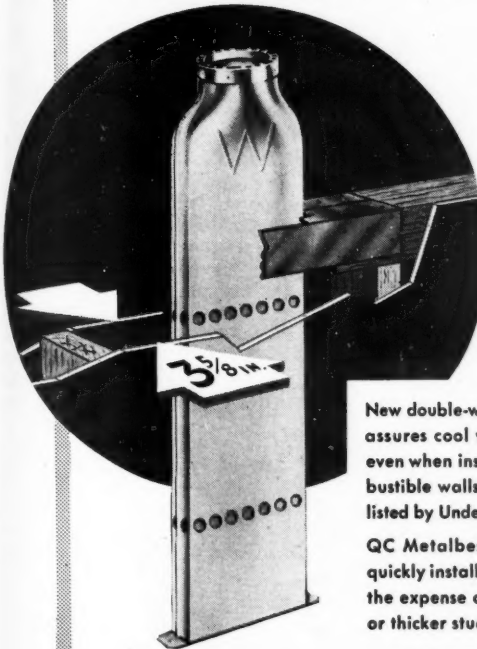
WALL HEATER VENTING

NOW

- **SAFE**
- **EASY**
- **SURE**

with
UNDERWRITERS'
LISTED

**QC METALBESTOS
WALL-VENT**



New double-wall, all-aluminum wall-vent assures cool walls and positive safety even when installed $3/8$ inch from combustible walls — a provision specifically listed by Underwriters' Laboratories, Inc.

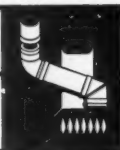
QC Metalbestos Wall-Vent is easily, quickly installed in 2" x 4" walls without the expense of furring, metal sheathing or thicker studding.

Write today to Dept. M

METALBESTOS DIVISION

WILLIAM WALLACE CO.

BELMONT, CALIFORNIA



Gains Power with High Compression

THE increasing interest in the use of butane and propane for internal combustion engine use is evidenced by many inquiries regarding problems of higher compression and changeover requirements which are received every month by BUTANE-PROPANE News.

The following letter is typical of one kind of inquiry and the information given in the answer will be of interest to many facing similar situations.

The Question

Gentlemen:

We would like to know how much can be milled off a set of heads on a

1947 Ford V-8 100-h.p. motor. The present compression ratio is 6.75:1, and we would like to raise it as high as possible without running into trouble with it from overheating by using the original cast iron heads.

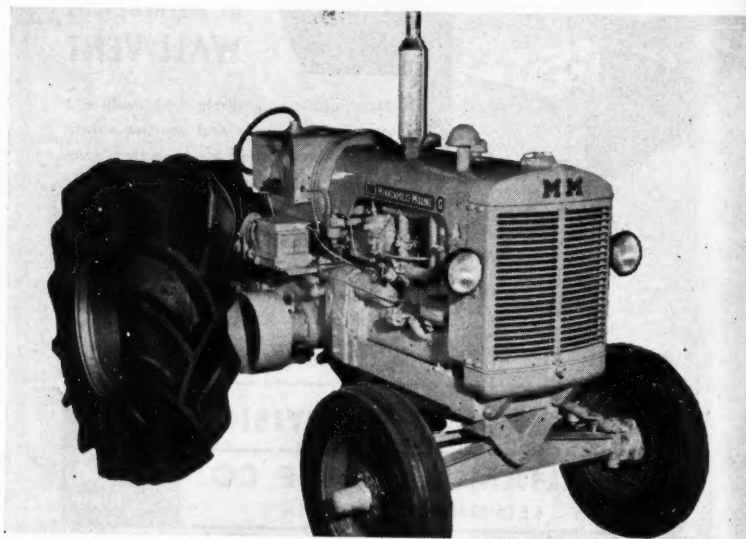
This motor is already changed over to butane with standard equipment and at present the gas mileage has not been very satisfactory. We would like to know how much this would increase the horsepower and gas mileage.

M.C.E.

Illinois

The Answer

Milling 1/16" off the heads of the 1947 Ford engine will give a com-



This Minneapolis-Moline tractor is factory-equipped to burn propane.

pression
which i
take to
heads,
metal t
side
block. I
thick,
much,
one wh
sibly p
which
After
regula
gasket
Turn
piston
probab
if so,
cutter
piston
each c
cleara
take o
clear
After
heads
adequ
which
on bu
The
into o
ing t
the o
press
sure
Ra
ed al
form
miles
more
ice i
that
After
rule
by s
on t
poss
U

pression ratio slightly over 7.5:1, which is as high as you should undertake to make it. Before cutting the heads, measure the thickness of the metal through the water holes on the side which goes down next to the block. If the metal is less than 3/16th" thick, the head will be weakened too much, and it should be exchanged for one which is thicker. You can probably pick one up at a wrecking yard which will be satisfactory.

After milling, lay the heads in their regular position on the blocks without gaskets, and without bolting down. Turn the engine over to see if the pistons strike the heads. They will probably raise the heads slightly, and if so, you will need to make a curved cutter, with the same contour as the piston tops, and cut out a spot above each cylinder to provide the necessary clearance. Make them all alike, and take out only the amount necessary to clear the pistons without a gasket. After gaskets are installed and the heads are bolted down, you will have adequate clearance for any deposits which form as the result of operation on butane.

There is no possibility of running into overheating as the result of raising the compression. Actually, it is the other way around. The high compression engine runs cooler. Just be sure not to cut the heads too thin.

Raising the compression as indicated above should show a gain in performance of about 10%. The gain in miles per gallon should be a little more than that. In some types of service it might be above 20%. Be sure that the ignition timing is correct. After raising the compression, the old rule will not apply. Set it on the road by adjusting the external adjustment on the distributor to give the best possible acceleration.

Unless the compression is raised,

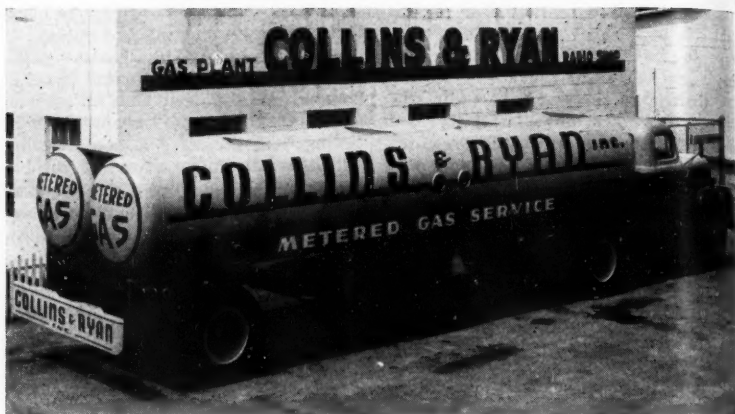
some loss of miles per gallon is to be expected when changing to butane. It contains about 25% less heating value per gallon than gasoline, and it takes heat to make power. Careful adjustment of the carburetor and ignition timing, and the raise in compression, will generally make a very creditable showing, besides improving the performance. It has been the general experience that if you give a man more power, he is much less critical about miles per gallon, and the steps which give the extra power raise the mileage to an acceptable figure.



Gas Heat, Inc., northwestern dealer, is making hundreds of engine conversions under direction of C. E. Ashline.

Twelve Dispensers Go to Italy

Twelve filling station dispensing units for transferring LP-Gas are being shipped to Italy. They were made by Parkhill-Wade, Los Angeles.



A new transport truck, built by Butler Manufacturing Co., and recently put on the road by Collins & Ryan, Millsboro, Del. The dual tanks carry 4800 gals. water capacity or 3970 net gals. of propane. Tank truck is used to haul fuel from the refinery to the company's bulk plant at Millsboro. It operates day and night.

More Bulk Storage Added By Collins & Ryan in Delaware

Already one of the largest plants and service departments on the Eastern Shore, Collins & Ryan, Millsboro, Del., recently added a 3970-gal. propane transport truck to haul fuel from the refinery to the bulk plant. The company plant, designed, engineered, and built by the Sun Oil Co., has a private railroad siding which can hold 11 cars at one time. The storage plant has a capacity of 100,000 lbs. of gas.

The main retail store of the company is a three-story building offering both appliances and furniture. A separate service department is maintained for each type of gas and electric appliance handled by the company.

According to Charlie W. Coulbourn, plant manager, the new bot-

tled gas plant refills eight tanks of gas at one time and has an operating average of a tank a minute. After filling, the tanks move on a turntable for painting and stenciling. Periodically all tanks pass through the company's cylinder testing equipment, recording the test outcome on each tank.

Delivery Truck Specially Fitted for Cylinder Filling

The accompanying picture shows a bottled gas service truck recently put into operation by Blue Flame Butane Gas, of Dallas, Texas, of which James E. O. White and W. D. Ables are the owners.

The truck, a one-ton Chevrolet, is especially designed to serve bottled gas to tourist courts and trailer camps. A desirable feature of the

truck is
Krug p
into the
also a
gal we
down a
pulled o
and slic
when t
These
be fille
right b
Dalwor
truck
Cust
trailer
Worth
driver
pictur
lollyp
him o

truck is that it is equipped with a Krug pump which pumps propane into the cash-and-carry cylinders and also a Fairbanks-Morse, folding, legal weight scale. The scale folds down and slides on a track. It can be pulled out and unfolded when needed and slid back into permanent position when the truck is ready to depart. These features permit a cylinder to be filled from the tank and weighed right before the eyes of the customer. Dalworth Tank Co. constructed the truck body and fabricated the tank.

Customers in 40 tourist courts and trailer camps in Dallas and 30 in Fort Worth are serviced by the truck. The driver (D. M. Young is shown in the picture) makes a practice of taking lollypops and all-day suckers with him on his route. Kids in the tourist

courts and trailer camps flock to the truck whenever it arrives.

James E. O. White says that he personally drove the truck one day over the route. But he forgot the lollypops. At the first trailer camp the kids began to gather in anticipation. Mr. White didn't discover what they were murmuring about until he heard one kid tell another, "This is the right truck all right, but it has a new driver." Sensing difficulty, Mr. White walked quickly to the nearest highway grocery, tucked a box of lollypops under his arm and returned to greet the smiling kids. From that day until now, Mr. White buys lollypops in quantity and has made them as much a part of the truck as the tank.



Truck driver operating Krug hand pump for filling small bottles.

Propane, Anhydrous Ammonia Relief Valves Compared

LIQUEFIED petroleum gas dealers handling anhydrous ammonia will be interested in a paper prepared by Phillips Petroleum Co., Bartlesville, Okla., which discusses the relative capacities of propane and anhydrous ammonia relief valves.

Space permits use of only the following introductory statement to the technicalities that are set out in the article. Those interested in further details may address inquiries to the above named company.

Relative Capacities of Propane and Anhydrous Ammonia Relief Valves For Storage Tanks in Which the Pressure Build-Up Must Not Exceed 300 Psi Gauge

By H. R. ZEIGLER and E. E. RUSH
Chemical Engineering Dept.,
Phillips Petroleum Co., Bartlesville, Okla.

Comparison of propane and anhydrous ammonia relief valve capacity requirements has been worked out by three methods.

One method, based on differences in latent heats and specific volumes, shows ammonia valves need to have 41.1% of the capacity of propane valves, other things being equal.

Another method uses Fetterley's formula as a vehicle to compare relief valves; and in addition to the above property differences, it takes into account the slightly different liquid temperatures at discharge conditions. This method indicates that the ammonia valve discharge requirement is 42.5% of the propane valve requirement.

The third method of comparison utilizes the formula which is the basis for relief valve capacities as published in the current edition of

NBFU Pamphlet No. 58. This method indicates that the ammonia valve discharge requirement is 39.2% of the propane valve requirement.

The writers believe that the third method of comparing valves is the most reliable method and that the first and second methods support it. A suitable ammonia tank relief valve can be selected by referring to the table, Appendix A, NBFU Pamphlet No. 58, Edition of 1947, under the column headed "Container Type 200." The necessary ammonia valves would have 40% of the capacities shown in this column for corresponding "D" times "U" valves.

AGA Laboratories Celebrate 25th Year

Twenty-five years ago, the American Gas Assn. Laboratories were founded in a small building rented from the East Ohio Gas Co. in Cleveland, to assure gas utility customers appliances that would be safe, durable and efficient. Approval requirements that became American Standards were drawn up and adopted governing ranges, space heaters and flexible hose. Within two years the Laboratories' National Safety Code had become an American Standard and in five years the Approval Requirements committee had become a sectional committee of the American Standards Assn.

Since that date Laboratories Approval Requirements committees have coordinated with almost every established national organization devoted to the protection and furtherance of the well-being of the public.

STAR PERFORMERS



No. 2A Furnace:

Bench type for plumbers, can be used in shop or field. Recommended by craftsmen for all-around use, it is lightweight, easy to handle. Will produce approximately 2350° of heat.

★ *In the SHOP*

★ *In the FIELD*

★ *On the FARM*

VERSATILITY is the big selling point of MUTUAL LP-Gas Plumbers' Furnaces and Torches. Designed for a wide range of uses by MUTUAL engineers, they have become standard equipment with Metal Workers, Contractors, Utility Crews, Farmers, Etc. Many craftsmen depend on Butane and Propane for fast, efficient heat. These include: Painters, Tinsmiths, Jewelers and many others.

MUTUAL'S easy-to-sell, easy-to-service furnaces and torches provide substantial year-round profits for YOU. Investigate NOW by sending for our complete catalog.



No. 4B Torch:

High speed torch designed for use in copper sweating. Excellent for field use. Lights instantly. Wheel-handle needle valve offers immediate control of flame. Develops 2450°F.

All workmanship and materials fully guaranteed!



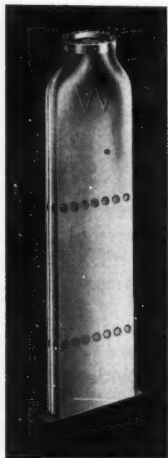
Mutual

LIQUID GAS EQUIPMENT CO., Inc.

3600 WEST IMPERIAL HIGHWAY, INGLEWOOD, CALIF.

Products

Wall Heater Vent



WALLACE VENT

William Wallace Co., Belmont, Calif.

Model: QC Metalbestos Wall-vent.

Description: Listed by Underwriters' Laboratories as a Type B gas vent without restrictions, the vent can be installed safely within $\frac{3}{8}$ in. of combustible walls. The new rectangular design permits the vent to be placed within standard 2 x 4-in. walls without the expense of thicker

studding, furring out, or providing metal sheathing

The inner flue pipe carries off hot combustion gases; insulating air between the double walls confines heat to the inner pipe and keeps outer aluminum casing and adjacent building walls cool. Circulation is also created through air entering the ventilating holes, providing an additional cooling effect on surrounding wall surfaces.

Furnished in 3-, 4-, and 5-ft. lengths, the Wallvent fits over the wall heater's fuel nipple and extends

through the ceiling where the round adapter connects to standard Metalbestos round pipe to make up the rest of the vent unit.

Mobile Truck Crane

Pitman Manufacturing Co., 300 W. 79th Terrace, Kansas City 2, Mo.

Model: Hydra-Lift.

Application: Suitable for handling tanks and cylinders and for setting underground tanks.

Description: Smooth, positive hydraulic action enables operator to pick up and set down loads exactly where he wants them without slipping or over-swing. The boom swings in 180° arc and speed of swing can be regulated by driver from the cab. The boom (which can be telescoped from 11 to 16 or 20 ft.) can be used



PITMAN TRUCK CRANE

BUTANE-PROPANE News

for straight line pull, and when in full upright position, can be used to load and unload off truck bed. Out-riggers are adjustable in height to allow for uneven terrain.

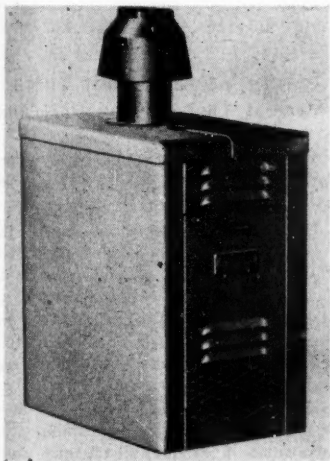
Capacity of Hydra-Lift varies from 6000 lb. with the boom at 11 ft. to 2500 lb. with the boom at 20 ft. The crane requires only 35 in. of space behind the cab and can be installed on any type truck frame with a few bolts.

Gas-Fired Boiler

Hook & Ackerman, Inc., 18 E. 41st St., New York 17, N. Y.

Model: Midget Hydrotherm.

Application: Particularly suitable for modern convector and panel heat-

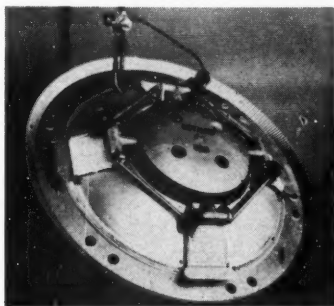


HOOK & ACKERMAN BOILER

ing systems. May be used in banks to heat multiple family dwellings and apartments of 3 to 6 rooms.

Description: The line has a Btu in-

put rating of from 45,000 up to 250,000 (single unit) and is AGA-approved for all gases, including LP-Gas. The Hydrotherm can also be used as a direct hot water heater to supply large storage tanks for residential, commercial, and industrial uses.



WOOD BROODER

Flash-Tube Brooder

A. R. Wood Manufacturing Co., Luverne, Minn., & Santa Cruz, Calif.

Model: Flash Tube System.

Description: Flash tubes are a new safety feature of the Wood radiant gas brooders. Each of the multi-burners is connected to all the others by flash tubes which guarantee all burners flashing into action from one pilot, should other pilots go out.

The flash-tube system can be installed on older Wood brooders.

"Impakdriver"

H. K. Porter, Inc., Somerville, Mass.

Model: Impakdriver.

Application: For tightening or loosening screws, bolts, or nuts.

Description: The Impakdriver util-

izes a cam principle that transfers the impact from a hammer's blow into torque strength. Particularly useful for starting stubborn nuts, bolts, etc., that are rusted or frozen, the tool is also useful for working in hard-to-get-at places.

Impakdriver is sold by itself or in



PORTER IMPAKDRIVER

sets with different combinations of bits and sockets for various sizes of screws, nuts, and bolts.

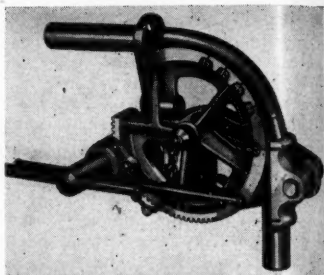
Tube Bender

Holsclaw Bros., Inc., 408 N. Willow Rd., Evansville, Ind.

Model: Heavy Duty Handy Tube Bender.

Application: Designed primarily for bending hard-temper tubing, steel and iron pipe for such industries as radiant heating, refrigeration, instrument control lines, chemical installations, plumbing, production, etc.

Description: A practical portable



HOLSCLAW TUBE BENDER

tool for pipe and tube bending, it can be used bolted to a bench or pipe vise. The tool is light and durable with adequate reinforcements wherever strength is required. It is cadmium plated to resist rust.

Made to fit to outside diameters of tubing in sizes $\frac{1}{2}$, $\frac{3}{8}$, $\frac{1}{4}$, and $\frac{3}{16}$ in.

Safety Valve & Pilot Burner

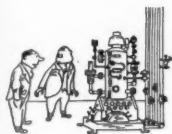
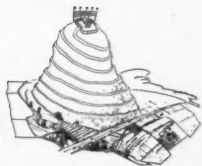
General Controls Co., 801 Allen Ave., Glendale 1, Calif.

Models: MR-5, $\frac{1}{4}$ -in. Gas Cock Safety Valve and 260 Series Pilot Burner.

Description: Designed with the consumer's pocketbook in mind, the new products are precision-made to accommodate the requirements of adequate heating control, while providing the means for absolute safety and low fuel consumption, it is reported.

The pilot burner, designed on a smaller scale than other models, incorporates a removable filter screen that assists in eliminating lint plugging. The special mounting bracket (for various types of appliance installations) holds both the burner and the thermocouple in secure operating relation to each other.

The $\frac{1}{4}$ -in. MR-5 gas cock safety



9 Reasons why it pays to keep your Butane-Propane Catalog handy!

1. It's easier to use than a filing system of separate manufacturer's catalogs. A file in itself, it classifies and indexes each manufacturer's product for quick reference.
2. Get faster deliveries by placing orders direct. Complete specifications eliminate the necessity of writing for further information.
3. To locate a local source of supply, the Geographic Index lists manufacturer's branch offices and distributors by state and city.
4. Dealers in out-of-the-way places, frequently overlooked by a manufacturer's salesman, use the catalog to demonstrate products they find hard to stock.
5. A dependable buying guide because it lists quality products made by reliable manufacturers.
6. Always up-to-date because it is revised every year to include the latest figures on new products and changes in the old.
7. Helps to sell a customer who insists on buying a product you do not have in stock, by demonstrating the merits of the product with the illustrations and descriptions in each catalog.
8. Helps to explain features and operating principles to your customers by referring to the cut-aways and diagrams in the catalog.
9. Helps you to choose wisely by comparing the merits of each product when you plan to expand your plant facilities or line of appliances and equipment.

YES! it's always handy

To Specify—To Buy—To Choose—When You Use
The Butane-Propane Catalog

RELIANCE REGULATORS

ARE DESIGNED AND TESTED
TO MAKE L-P GAS BEHAVE



A Reliance Regulator will make gas behave in every conceivable regulating application in the liquid petroleum industry. The wide range of sizes with many variations of Reliance Regulators provide positive and uniform control for all pressure conditions in L-P gas lines.

- Since the birth of the L-P gas industry, Reliance Regulators have been preferred for their originality of design, by which positive lock-up and absolute control of

steady outlet pressure are assured under variable loads and inlet pressures.

Simplicity reduces installation costs, minimizes maintenance service, reduces size and weight for convenient handling. To make your L-P gas system behave, install Reliance Regulators.

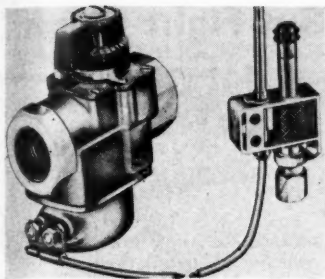
BULLETINS ARE AVAILABLE ON THE COMPLETE LINE OF APPROVED RELIANCE REGULATORS.

**AMERICAN
METERS**

RELIANCE REGULATOR DIVISION

AMERICAN METER COMPANY
INCORPORATED

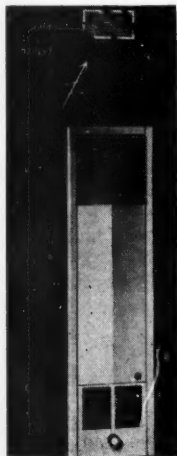
1000 MERIDIAN AVENUE, ALHAMBRA, CALIFORNIA



GENERAL CONTROLS VALVE & BURNER

valve includes the 100% safety shut-off feature. The plastic manual reset handle may be removed to expose a rod fitting device for use with floor furnace installations.

Wall Heater



**HOLLY
WALL HEATER**

Holly Manufacturing Co., 875 S. Arroyo Parkway, Pasadena, Calif.

Model: Narrow-Wall.

Description: This recessed wall heater line features a secondary heat exchanger which saves heat otherwise lost through the flue. The new heaters extend from floor to ceiling and are AGA tested and approved for use within 2 x 4-in. walls covered with lath and

plaster, wood panels, wall board, or other combustible material.

Sizes available: single or dual models with 25,000 and 35,000 Btu input; dual model with 45,000 Btu input. All models are approved for LP-Gas, natural and manufactured.

House-Heating Catalog

A 19-page catalog describing Coleman home heating equipment—blend-air central heat, forced air furnaces, floor furnaces, wall heaters, and water heaters—has been issued by the Coleman Co., Inc., Wichita, Kan.

The catalog is illustrated with cut-away drawings of the many types of heaters and various installations, detailing the specifications of each unit. It is available upon request.

Kansas Firm Issues New Publication for Customers

News of the industry, of interest to fuel users as well as suppliers, is being presented to the customers of Hettie Gas Co., Liberal, Kan., in a new monthly publication entitled "The Gas Tank."

The first issue, in September, told readers about the LP-Gas carburetion forum sponsored by Hettie, presented facts about LP-Gas of interest to users, and carried ads of appliances, equipment, etc., available through the company.

Columns on household hints and how to buy and save were presented for the women readers. In the household hint department, readers are invited to submit recipes, work-saving ideas, etc.—with cash prizes for the favorite recipes.

"Fight For Business, But Fight Clean," Is Slogan of Successful Dealer

CAN fair, hard competition and friendly cooperation between competitors make business profitable and free the butane industry from monopoly by dominating groups?

The Tri-County Gas & Appliance Co., Inc., of Russellville, Pope county, Ark., says that friendly cooperation is the salvation of the butane industry. It cooperates with its competitors; but gives them a clean fight for customers, and never gives them an underhanded deal. This policy is the foundation of a prosperous business.

Hard Work Pays Off

President of the corporation is William C. Murphy, an Irishman with energy enough to run three corporations. He says it takes honesty, hard work, and guts to succeed in any legitimate undertaking. L. I. Van Landingham is secretary and treasurer, a quiet-spoken man with initiative and an eye for opportunity. They make a finely balanced team for running a successful business.

Tri-County officials began an independent business in 1945 by convincing the Peoples Exchange Bank of Russellville, and Phillips Petroleum Co., Bartlesville, that they were a good risk. They invested \$20,000 in storage tanks, \$12,000 in transport trucks and went to work. Now, they are beginning to see the end of their indebtedness.

Mr. Murphy knows the butane business from its beginning in Arkansas. Before going into the business, he was supervising engineer of Hartford Steam Boiler Inspection &

By ZOE JOHNSON

Insurance Co., and had a thorough knowledge of installations.

At the birth of the industry, he was on the Boiler Advisory Board and in cooperation with J. D. Newcomb, Jr., was instrumental in setting up the laws, rules and regulations of the industry. He wrote the first examination questions under the state law for qualification of men installing butane systems.

Russellville has a population of over 7,000. The principal money crops are peaches and cattle. The poultry business is beginning to grow and a few miles from the town is the Thompson turkey ranch, claimed to be the largest turkey farm in the world. From this famous farm, turkeys roasted ready for the table are shipped all over the United States.

The growth of the poultry industry will give new outlets for butane installations.

Tri-County does business in Pope, Johnson, and Yell counties. There is a branch office at Clarksville in Johnson county and storage tanks over the distribution area that keep hauls within 25 miles. Mr. Van Landingham says any haul over that distance is unprofitable.

Their combined storage capacity is 40,000 gallons with 5500 gallons at Clarksville and 6000 gallons in Yell county. Most of their gas is hauled in their own transports from Okmulgee, Okla.

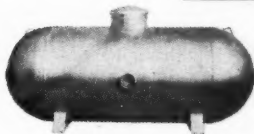
One angle of their friendly coop-

IF you're looking for highest quality—
get everything

from **TANKS**



100# I.C.C. CYLINDERS



DOMESTIC SYSTEMS

Butane Systems — U-69 construction — 101 lbs. working pressure — above or underground.

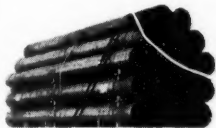
Propane Systems — U-69 construction — 200 lbs. working pressure — above or underground.

200# CAPACITY
PROPANE CYLINDERS

200# W.P.
U-69 A.S.M.E.
57 Water Gallon
Capacity



20-LB. I. C. C. CYLINDERS



We can fill
your order for sizes ranging from 20"
through 36" in sections 30' to 31½'
long.

to **STEEL PIPE**

AT MASTER!

also
STORAGE TANKS
TRUCK TANKS
REFINERY EQUIPMENT
ANHYDROUS
AMMONIA VESSELS



P. O. Box 5146

Prospect 2441

DALLAS, TEXAS

DECEMBER — 1950

123

eration with competitors is hauling gas for three other dealers. They thus keep their transports busy in the off-season and give their neighbor dealers a cheaper haul.

Their greatest worry is unfair price cutting by some dealers. They meet this kind of competition by going out and selling year round service; convince the customer that saving 50c on 50 gallons of gas does not count very much when he gets in a pinch in cold weather and is left without gas.

Tri-County has never been without gas to serve customers in the coldest weather. It has even gone to the rescue of Independence county dealers several counties away when their storage tanks were empty—another service of friendly cooperation.

They are the only dealers in the area that handle propane bottles. But it is the combination offer of a 115-

gallon tank with a choice of ranges for a fair price that brings in the most new customers. A larger tank and the gradual addition of other butane appliances follow as the customer can afford them.

The chief advertising medium is the local newspapers. Satisfied customers are the best recommendation. Most installations have been for homes, but schools, churches, and two cotton gins are on the list. Also, truck and tractor fuel installations.

The company contemplates installing many new systems during the rest of the year. Mr. Murphy says that in his estimation, only about 20% of his area has been serviced with butane and the remaining 80% will become customers in after years. He sees plenty of business for all honest dealers who will practice friendly cooperation.



John Souza, LP-Gas dealer of Turlock, Calif., flies his "Ryan Navion" for business as well as pleasure. Serving a widespread area, he often needs quick transportation for servicing appliances and equipment, delivering parts, or consulting with customers in outlying areas when emergency situations arise.

Pipe Line Capacities in Cubic Feet Of Propane For Medium Pressure

MANY LP-Gas dealers have encountered difficulties in figuring pressure drop and pipe sizing when running long lines to service outlets, such as in auto courts.

Much enlightenment was thrown upon this subject by the publication in the March issue of *BUTANE-PROPANE News* of a pipe sizing table. It showed pressure drop, pipe length and diameter, and gas flow in Btu's.

In the accompanying table are given pipe capacities in cubic feet per hour at various pressures.

This is of particular value in estimating requirements when large heating loads are added to a line. Temperatures are also covered.

Table 1 shows pipe capacities in cubic feet per hour of propane at medium pressure. All flows are for 100 lineal feet of straight pipe or tubing.

If it is desired to obtain the capacity of the lines for other lengths, then multiply the flow capacity at 100 ft. by factor 10, divide the square root of the length of pipe in feet. For example, it is desired to know the quantity of propane that will pass through 225 ft. of ½-in. Type K tubing with 2 lbs. drop in pressure and 10 lb. at the discharge of the regulator. Refer to ½ in. K tubing under 10 lb. pressure — 2 lb. drop and read 420 cu. ft. per hour. Then

TABLE 1

Regulator Pressure		5 lb.	10 lb.	10 lb.	10 lb.
Pressure Loss					
Through Line		1 lb.	1 lb.	2 lb.	3 lb.
Standard	½ in.	320	360	510	610
Steel	¾ in.	690	770	1100	1300
Pipe	1 in.	1300	1430	2050	2425
Size	1¼ in.	2650	3000	4100	5000
	1½ in.	4000	4250	6150	7400
Type K	¾ in.	135	150	210	255
O.D.	½ in.	265	295	420	500
Copper	¾ in.	450	500	690	850
Tube	¾ in.	630	710	1000	1200
	1 in.	1310	1470	2075	2450
Type L	¾ in.	160	180	250	300
O.D.	½ in.	290	325	450	550
Copper	¾ in.	490	540	750	900
Tube	¾ in.	720	800	1130	1360
	1 in.	1400	1590	2225	2650

$$420 \times 10 \quad 420 \times 10 \\ \text{---} = \quad \text{---} = 280 \text{ cu. ft.} \\ \sqrt{225} \quad 15$$

of propane per hour.

When calculating the length of pipe add additional footage for tees, valves, elbows, etc., which may be included in the lines.

Following are dew-point temperatures of propane at various pressures:

Pressure		Dew Point
Gauge	Absolute	Temperature
5	19.7	-31° F
10	24.7	-21° F
15	29.7	-11.1° F
20	34.7	- 3.0° F

See Figure 4 "Vapor pressure of ethane, propane, isobutane, normal butane, isopentane and normal pentane," Page 45; or Figure 7, "Dew

points of propane, normal butane, and isobutane carburetted with air," Page 38 of Handbook Butane-Propane Gases.

Note in Figure 4 that the pressures used are absolute. To convert gauge pressures to absolute pressures, add 14.7 lbs. to them.

New LP-Gas Dealer Organizes in New York

The Utica Gas Co., Inc., of Utica, N. Y., opened for business recently. The company will feature bottled gas, but will also sell other petroleum products.

Directors of the new company are Walter A. Roberts, Alfred L. Jones, and Walter C. Rabenstein.



Sales of both liquefied petroleum gas and appliances have been increased by DeLong's Propane Service Co., Riviera Beach, Fla., through door-to-door demonstrations in this new type delivery truck. A wide selection of kitchen stoves, refrigerators, water heaters, and other appliances is carried in a Dodge route-van truck with 462 cu. ft. of cargo space. The truck is specially adapted to frequent-stop delivery of bottled gas and on-the-road demonstrations of appliances.

Holiday Gift Order Form

FOR BUTANE-PROPANE NEWS

*Please enter the following gift subscriptions
and send gift cards as indicated below . . .*

\$2.00 for 1 Year • \$5.00 for 3 Years

Foreign Rate \$3.00 for 1 Year

 Send B-P News for _____ years to

name (please print) _____

street _____

city, zone, state _____

gift card to read _____

Send B-P News for _____ years to

name (please print) _____

street _____

city, zone, state _____

gift card to read _____

Send B-P News for _____ years to

name (please print) _____

street _____

city, zone, state _____

gift card to read _____

Send B-P News for _____ years to

name (please print) _____

street _____

city, zone, state _____

gift card to read _____

and send me a bill for these subscriptions.

Name _____

Address _____

City, Zone, State _____

PLEASE CHECK

Total Amount of Order _____ ☐ I Enclose Remittance ☐ Bill Me After Christmas

Fill out and mail to: BP-NEWS • 198 S. Alvarado • Los Angeles 4, Calif.

The Trade

Harry A. Busten has been appointed general traffic manager for **Warren Petroleum Corp.** to fill the vacancy created by the recent death of N. A. Lindsay, according to an announcement by President W. K. Warren.

Mr. Busten assumes his new duties after serving as assistant general traffic manager for the Warren organization for several years. He has announced the appointment of Oscar W. Utz to be assistant traffic manager in charge of rates; Ray E. Cramberg, assistant in charge of LP-Gas transportation; Douglas A. Collins, assistant in charge of natural

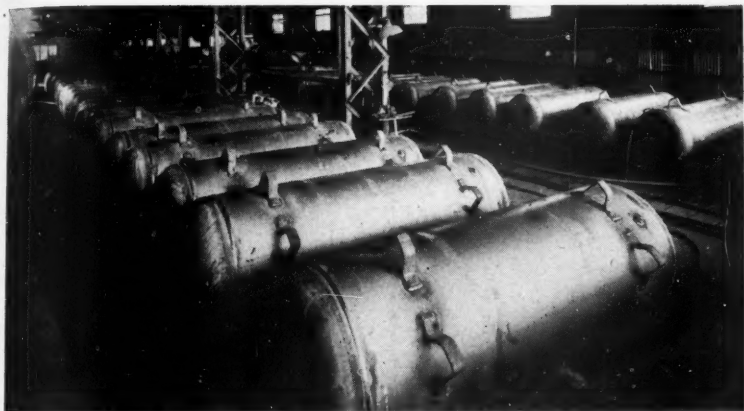
gasoline transportation and H. G. Cosley, assistant in charge of the Houston, Texas, district.

Dearborn Stove Co., of Chicago and Dallas, is "wheeling" its line of products all over the country in a fleet of five new, custom-built, specially designed, display-demonstration coaches to show dealers Dearborn products in operation. Announcement of the new service is made by C. N. Hinds, general sales manager.

Each coach is equipped with a model of every Dearborn product—



The traveling demonstration car of Dearborn Stove Co.



These Buehler Tank & Welding Works (Los Angeles) 287 water capacity propane plants are readied for testing prior to cleaning and painting. As many as 10 carloads of one size of tank have been scheduled through the shop at one time. One feature of this product is the fittings are placed under an extra large guard box to insure safety in handling.

vented, unvented and radiant gas heaters, evaporative coolers and the Sifon-Aire window exhaust fan. Special LP-Gas tanks provide fuel to demonstrate the heating and engineering features of the Dearborn space heaters.

The Chicago quarters of **Shand & Jurs Co.**, Berkeley, Calif., manufacturers of petroleum equipment, have been moved to 10409 S. Western Ave. The new quarters are complete with their own warehouse and storage facilities.

Bill Burkett has joined the sales force of **Mutual Liquid Gas Equipment Co.**, of Inglewood, Calif., according to announcement by J. S. Fagan, president of the company.

Mr. Burkett will act as a field rep-

resentative for Mutual and will be active in the sale of fuel for commercial and industrial users. His territory will include all of southern California.

Previous to his joining Mutual, Mr. Burkett worked as assistant to Bob Cole in the Long Beach office of Anchor Petroleum Co. He has had many years' experience in the petroleum industry, and has specialized in the LP-Gas field during the past few years.

D. D. Couch, vice president and general manager of sales of the **American Radiator & Standard Sanitary Corp.**, was elected to the board of directors of the Producers' Council for 1951 and 1952.

Mr. Couch has been associated with American-Standard since 1925.

Howard L. Spindler, who has been manager of advertising and sales



Who *ISN'T* Price Conscious?

In these days of keen competition, **price** plays an important part in selling. The "buy-first" ... "price-later" days are gone forever! Select the HELCO 50-A ... the regulator designed to meet **your** price requirements.

CHECK THESE FEATURES:

- ✓ Simplicity
- ✓ Dependability
- ✓ Rugged Construction

Dealers along the Atlantic, Gulf and Pacific Coasts have made HELCO regulators standard equipment.

SPECIFICATIONS

Capacity Rating50 cu. ft.
Delivery Pressure11 in. w.c
Inlet Connections1/4 in. pipe
Outlet Connections3/8 in. pipe

Helco Products Corp.

2041 Colorado Ave., Santa Monica, Cal.

promotion, has been named director of public relations, according to an announcement by Mr. Couch.

Robert W. Lear was promoted to the position of manager of advertising and sales promotion. Mr. Lear was formerly assistant manager of this department.

J. N. Crawford, director of sales, Bryant Heater Division, A.G.E., Inc., Cleveland, recently announced the



J. N. CRAWFORD

opening of a branch office in Detroit. J. H. (Hes) Swallow, formerly Southern district sales manager, has been appointed manager of the new branch, located at 617 Central Detroit Warehouse, 10th and W. Fort Streets.

Mr. Swallow, formerly with the Detroit Gas Company, will confine his Bryant operations to St. Clair, Macomb, Oakland, Wayne and Monroe counties.

Charlie Lockhart, formerly assistant to Mr. Swallow, now becomes Southern district sales manager with headquarters in Dallas, Texas.

L. L. "Pete" Peters has been named LP-Gas sales manager in a realignment of American Stove Co. sales activities. He succeeds B. R. Tritton, who was recently appointed assistant secretary, and whose function as general credit manager has been transferred from the sales department to

the treasurer's office, according to Marc W. Pender, vice president in charge of sales.

Mr. Peters joined American Stove Co. as a salesman in 1940. In March of this year he was appointed commercial sales manager, a responsibility he will retain in addition to managing the company's nation-wide LP-Gas sales.

C. E. Murray, of Bartlesville, Okla., vice president and secretary of Cities Service Oil Co. (Del.) and affiliated companies, will retire Jan. 1, according to an announcement by A. W. Ambrose, president. Upon retirement Mr. Murray will have completed almost half a century of active service with the company.

This is one of the longest employment records of any Cities Service employee.

C. O. Relephord has been appointed to the position of Los Angeles branch manager for the pump division of Byron Jackson Co., according to Lynn Sawyer, general manager of the division and vice president of the company. The Los Angeles territory will cover several western states, Mexico and the Far East.

After graduation from the University of Oklahoma in 1932, Mr. Relephord was employed in a sales engineering capacity, dealing with technical equipment and applications



C. O. RELEPHORD

Peerless **Gas CIRCULATORS**

A.G.A. APPROVED

Radiant and plain front fully vented models.

20,000 to 60,000 B.T.U. sizes.

Manual or Automatic Controls.

NEW Silver-Tan finish.

NEW Seam Welded gas tight heating sections.

Write NOW for complete NEW literature on the line that sells.

Forced air and gravity, Gas Circulators—Unit Heaters—Panel Heaters—Wall Heaters—Radiant Heaters.



PEERLESS MANUFACTURING CORP., LOUISVILLE 10, KY.



Immediate
SHIPMENTS FROM
PLANTS IN...

**ARKANSAS
CALIFORNIA
KANSAS
LOUISIANA
OKLAHOMA
TEXAS**

WRITE, WIRE OR TELEPHONE

SUNRAY OIL
CORPORATION
GENERAL OFFICES
Tulsa, Oklahoma

for the oil industry throughout the Mid-Continent area and after the last war (in 1946) became affiliated with Byron Jackson, locating in the Houston, Texas, office of the company, where he has been active in the analysis of the technical applications of pumps for the oil industry.

Metalbestos Division, William Wallace Co., Belmont, Calif., announces the opening of a Los Angeles branch office at 612 South Flower St. Manager of the new office is Robert A. McHugh.

A. L. Hawley, Jr., is vice president-sales manager of the company.

L. A. Dixon, vice president of Rockwell Manufacturing Co., has announced the appointment of H. Gottwald as assistant vice president of the company's meter and valve division. For the past year he has been assistant sales manager of Nordstrom valve division of the company.



H. GOTTWALD

Prior to the move into Pittsburgh, Mr. Gottwald was assistant vice president of the Rockwell International Corp., and in that capacity traveled extensively throughout all of the Western Hemisphere, handling all products of the Rockwell Manufacturing Company.

Mr. Gottwald started with the company in 1928 as a sales engineer in the New York district office.

Wm. A. Marsteller has resigned, effective Jan. 1, as vice president of the Rockwell Manufacturing Co. and as

Sell This Brand New GAS BURNING TANK HEATER

Here's a low-cost, efficient, gas burning stock tank heater you can sell at a good profit. This self-sinking heater is easily installed in any stock tank. Simple manual control. Patented flame spreading spiral baffle in radiator assures maximum heat output.

The peak of the sales season is here. See your jobber or write for literature and price lists today.

Model SGMH Illustrated

SIEBRING

120 Main Street

George, Iowa

- EASY TO SELL
- EASY TO INSTALL
- EASY TO SERVICE



Pat. Appl. for
No. 179,204

HASN'T LEAKED YET!

INTERNATIONAL SUPER-GRIP RE-ATTACHABLE COUPLINGS

*Designed for use on Commercial Hose,
Propane, Butane and other extremely
High Pressure applications*

● Frankly, we don't know how much pressure SUPER-GRIP will hold. On every test high-pressure hose burst before the coupling showed signs of leakage.

The 3-piece Super-Grip design grasps the hose firmly but gently, effectively sealing hose and coupling over a broad area. Assembling and tightening the coupling automatically contracts flat spiral grip. Simple to assemble, no special tools are needed.

Wherever rubber hose is used in the handling of liquid petroleum products, Super-Grip couplings give safe assurance against leakage and save costs.

Write today for catalog and prices.



**The INTERNATIONAL
METAL HOSE Co.**

A Division of The Gabriel Co.
CLEVELAND 3, OHIO



ONE OF THE BIG THREE STANDARDIZATIONS —WELDIT TORCHES

Weldit Torches have been accepted as standard by one of the divisions of the Big 3 automobile manufacturing group. Such recognition hallmarks Weldit Torches as tops in quality and performance. Shown above is the initial shipment of rugged Weldimatic No. C-47 Lightweight Blow Pipes and No. W-46-F Heavy Duty Weldimatic Welding Torches.

Write today for technical information that will save you money in your welding operations.

Weldit
INC.
SINCE 1918

994 OAKMAN BLVD

DETROIT 6, MICH.

vice president and director of Edward Valves, Inc., East Chicago, Ind., to establish The Marsteller Co., consultants in marketing and advertising. The new firm will be located at 612 N. Michigan Ave., Chicago, after the first of the year.

Mr. Marsteller has been responsible for advertising, market research and sales promotion for the Rockwell Manufacturing Co. and its 14 divisions. Recently in an executive advisory capacity with Edward Valves, he was formerly in charge of sales, advertising and employee relations for this company.

Donald Dailey, veteran appliance designer and holder of 25 patents for his industrial designs, has joined Servel Inc. as product manager, according to president W. Paul Jones. Mr. Dailey's career in industrial design connotes executive association with such widely recognized firms as Tappan Stove Co., Proctor Electric Co., Philco, Fairbanks-Morse, and General Electric. Before joining Servel, Mr. Dailey operated an industrial design organization in Philadelphia.



DONALD DAILEY

Pan American Casualty Co., Houston, Texas, pioneer in butane gas insurance, has just extended Arkansas butane dealers its specialized facilities for writing insurance at regular, normal rates on their operations. T. E. Gammage, Sr., president of the Pan American Co., announced that the company would do business in Arkansas through the



CITIES FUEL CORPORATION

A Good Franchise Hauler



**10 Years of
Dependable Service**

CITIES FUEL CORPORATION • P.O. Box 365 • Fresno, California



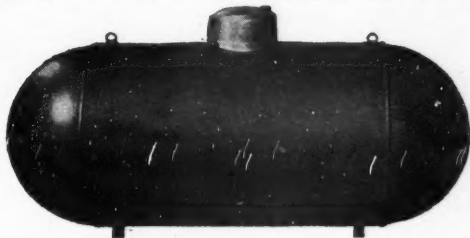
SIZES

115-250-387-500 GAL.
(W.C.)

ABOVEGROUND AND
BELOWGROUND
MODELS...

A *Burnham* **PRODUCT FOR THE
LP-GAS INDUSTRY...**

For Off-the-Main Gas Service Burnham Systems Are Best in Design, Quality, Service



Burnham Corporation

2 Main Street

BOILER DIVISION

Irvinaton, N. Y.

**PREVENTS LEAKS
ON ALL
LP-GAS EQUIPMENT**



***This one non-hardening
Compound is the answer to
all your sealing problems.***

- ✓ Underwriters' Approved
- ✓ For Use on Threads or Gaskets
- ✓ Recommended for L-P Gases
- ✓ Seals Permanently yet never hardens
- ✓ Insoluble in all Petroleum Services
- ✓ Eliminates Seizing, galling, rust
- ✓ Pressures to 6000 psi. Temperatures to 550° F.

Underwriter's approved for all petroleum liquids and gases, including Butane and Propane; highly effective on steam, water and many other services.

Simplifies maintenance and prevents dangerous leaks in threaded and gasketed connections.

The non-hardening qualities of "PLS" allow easy thread dis-assembly and re-use of gaskets.

Ideal for underground connections and outdoor equipment in all kinds of weather.

Write for free test sample
Dept. BP11, 1838 Cuyler,
Chicago 13, Ill.

JOHN CRANE

PACKINGS AND
MECHANICAL SEALS

CRANE PACKING COMPANY
CHICAGO

Offices in All Principal Cities in the United States and Canada

managing general agency of W. M. Apple & Co., of Little Rock, which, in turn, is represented by leading local agents located throughout the state.

Arkansas is the seventh state in which Pan American Casualty Co. is writing complete casualty insurance coverages for the LP-Gas dealer. Other general agents recently appointed by Pan American to serve the LP-Gas dealers are: C. G. Blakeley and Co., Topeka, Kan.; Louisiana Bettes Co., Inc., Alexandria, La.; George E. Fears and Co., Oklahoma City. Cliff Kealey, of Albuquerque, has been appointed state agent to serve New Mexico and Arthur E. Petersen in Phoenix, Ariz.

American Meter Co. announces the election of J. H. Satterwhite as president of the Westcott & Greis, Inc., Division of American Meter Co., with headquarters in Tulsa, Okla.

J. W. Greene has been appointed to the newly created position of assistant manager of the valve and fitting department of Crane Co., Chicago.

F. J. Rudolph, a 31-year employee of Perfection Stove Co., has been named assistant manager of the company's Kansas City, Mo., district. For the past year he has held the same post in the Jersey City, N.J., district.

All of Mr. Rudolph's business career has been associated with the distribution and sale of Perfection Stove products.

W. J. Bruce is manager of Perfection's district offices in Kansas City.

Perfection has a new export manager, too, replacing 14-year veteran L.

VIKING LP-GAS PUMPS

For BULK PLANT
FARM TRANSFER
TRUCK MOUNTING
HAND DISPENSING

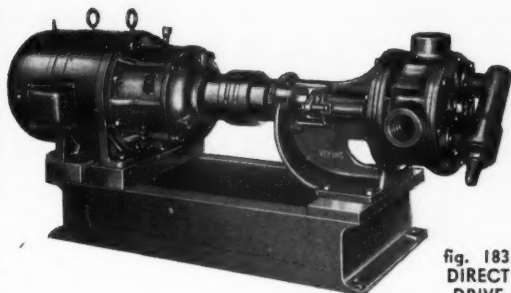


fig. 183
DIRECT
DRIVE



Viking LP-Gas Pumps in 5 and 10 gpm sizes are direct connected to 1200 rpm motors. Those in sizes of 20, 30 and 55 gpm are direct connected to geared head motors (illustrated). See the complete Viking line. Ask for free bulletin 2303B today.

VIKING PUMP CO. CEDAR FALLS IOWA

MR. WHOLESALER —

YOU should know!

Yes! You SHOULD know why pure Panoma L-P gases give complete consumer satisfaction. And here's why—they are: 1. uniform in quality and free of moisture, sulfur and residue. 2. straight from OUR wells. 3. processed in OUR two automatically controlled plants. 4. tested by sales-wise wholesalers from North Dakota to Georgia. 5. tried and proven since '38. So for dependable butane and propane contact Panoma—wholesale only.

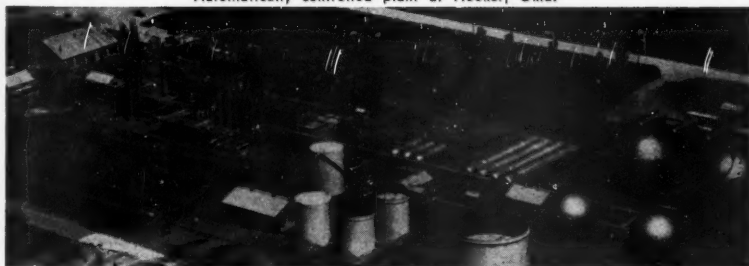
For information write or telephone TODAY!

PHONE
3-8353

PANOMA CORPORATION

AMARILLO,
TEXAS

Automatically controlled plant at Hooker, Okla.



Liquefied Petroleum Gas

Cities Service Oil Co.

•

A DEPENDABLE SOURCE
UNIFORM PRODUCTS
A CAPABLE SUPPLIER
TWENTY YEARS' EXPERIENCE

•

IN LP GAS ALSO

CITIES SERVICE
MEANS
GOOD SERVICE

•

CITIES SERVICE OIL CO. (Del.)

•

BARTLESVILLE, OKLA.
CHICAGO, ILL.

Other Sales Offices

Cleveland
St. Paul

Kansas City
Toronto

B. Tuttle, who retired recently. The new man is Donald W. Milestone, who joined Perfection 3½ years ago. Most of the Perfection export operation is concerned with Latin American markets.

Replacing Mr. Milestone as Perfection's service manager of the cook stove and heater division is Robert K. Guy, former AGA tester and Detroit Brass & Malleable Works engineer. Another Perfection appointee is Harry Cramer, who joins the Oakland (Calif.) district sales staff.

Waldorf Heater Co., Philadelphia, has announced the appointment of the Webster Corp., 2300 Colley Ave., Norfolk, Va., as its sales representative in the states of Virginia, North Carolina and South Carolina, for Waldorf and Sterling LP-Gas water heaters.

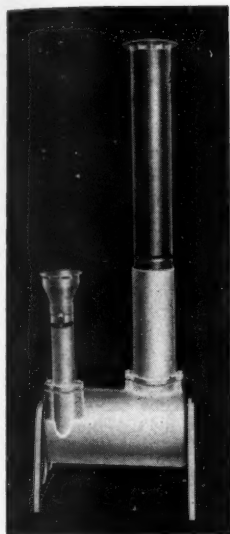
The Eclipse Fuel Engineering Co., Rockford, Ill., has named A. C. Perks president and general manager.

Mr. Perks was formerly executive vice president in charge of production. H. P. Howell, formerly president, is now chairman of the board of directors.

James L. Whitcomb, formerly sales manager, has been made general manager of Kelley Manufacturing Co., Houston, Texas, and J. Keith Davis, formerly sales representative, has been named sales manager, it is announced by Mrs. Edward W. Kelley, president of the corporation.

Mr. Whitcomb has been with the company for over five years and Mr. Davis for over 12 years.

Kelley Manufacturing Co. was founded in 1938 when the late Colonel Edward W. Kelley bought out the old Tennison Manufacturing Co. Since that time it has become an important



TESCO

Model 900-B STOCK TANK HEATER

- Expressly designed for liquefied Petroleum gases.
- Fully guaranteed to give excellent performance.
- Can be adjusted to keep your stock drinking water at a suitable temperature in any weather conditions.

FEATURES

- 17,500 BTU input capacity
- 60 lb. weight insures submersion
- Drilled port, cast iron burner
- Will not leave film on water

Also manufactures Blue-Blaze Space Heaters, Blue-Blaze Draft Caps, and Gas Plates.

TESCO *Incorporated*

110 S. NORFOLK • TULSA, OKLA.

Butane & Propane

Carter

Producers of high quality
Liquefied Petroleum Gases Since 1931
Wholesale Only

THE CARTER OIL COMPANY
T U L S A , O K L A H O M A

A Complete Line of Vented Heaters

Four beautiful, new PREMIER Gas Heaters from 15,000 B.T.U. to 40,000 B.T.U. ready to make sales for you! Feature the complete line and you'll profit with 'PREMIER'. Finished in brown porcelain enamel with chrome trim.

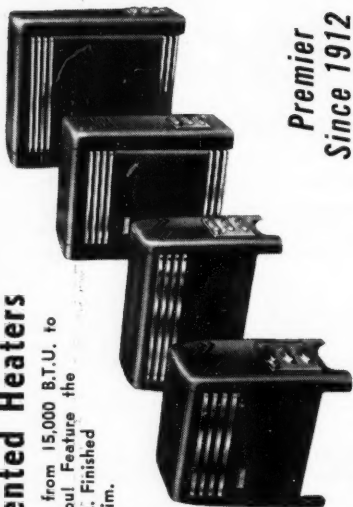
Standard equipment includes constant burning manual pilot. A. G. A. approved.

Sell two PREMIER heaters for each installation. Provides better heat control . . . better heat distribution!

STOVE COMPANY
100 SOUTH SIXTEENTH STREET
BELLEVILLE, ILLINOIS

Premier

Premier
Since 1912



supplier of steel products to industry of the Southwest. The company manufactures steel stampings, punchings and assemblies for: the petroleum and chemical industries, and tank heads for butane and propane tank builders.

The Florence Stove Co. has appointed the Electric Supply Corp., of Chicago, as distributor of all Florence products, it was announced recently by F. B. Jeremia, sales manager of Florence's Midwest division.

Canadian Kellogg, Ltd., has started operations in a new pipe fabricating shop in Edmonton, Alberta, it is announced by the parent company, The M. W. Kellogg Co., engineers and fabricators of New York and Jersey City. The shop was opened to service the rapidly expanding requirements for power and process piping in western Canada.

The appointment of Walter F. Garlow as sales promotion manager of The Howe Scale Co., Rutland, Vermont, was announced recently by Richard F. Straw, vice president in charge of sales.

In order to accept this position, Mr. Garlow resigned as advertising manager of the Hewitt Rubber Division and the Hewitt Restfoam Division, Hewitt-Robins, Inc., Buffalo, N. Y.

American Stove Co. has named J. J. (Joe) Edwards manager of its Pacific sales division, effective Dec. 1. J. J. Knotek, Pacific sales manager for the past year, will receive a new assignment to be announced soon.

The Pacific sales division, covering most of six western states, has its headquarters at 4494 East 49th St., Los Angeles.

First See
GRIFFITHS
for
Conversion Parts

We can supply a wide assortment of spuds, orifices and other parts for converting domestic and commercial equipment to any type gas. Also, a complete line of repair parts for all types of gas meters.

Write for catalog.

**E. F. GRIFFITHS
 COMPANY**

350 E. Walnut Lane, Philadelphia 44, Pa.
*Serving the Gas Industries
 For Over 40 Years*

**NOW . . . GET
 THIS STRAIGHT**

We are offering a
 limited quantity of

**HANDY
 L P GAS**



REFERENCE BOOKS

for a **LIMITED TIME** only
for \$25.00

Same material as contained in our 60-
 chapter Home Study training course,
 completely indexed.

A Dependable Reference Book prepared
 by practical men for practical men.

ORDER NOW

While they are available.

National L-P Gas Institute

1105 S. Main Tulsa, Okla.
 Your Safety Insurance

☆
Greetings



from



your Quality L-P GAS
 EQUIPMENT DEALER



**GAS EQUIPMENT
 SUPPLY CO.**

127 ELLIS ST. N. E.

ATLANTA, GA.

MEXIHOT *makes*
Friends-Sales-Profits
for YOU



Barbecue HAMBURGER

Thousands of installations in drug stores, tap
 rooms, roadside stands, cafes and other places
 that serve lunches have brought big repeat busi-
 ness. Low price means quick sale. Write for
 distributorship at once.

Copyright 1947

Department B-10

DICKERSON MANUFACTURING CO.
 SPRINGFIELD, MO.



TRUCK TANKS

Twin or single barrel—Light weight—Low in cost—Full or semi streamlined—ASME U69.

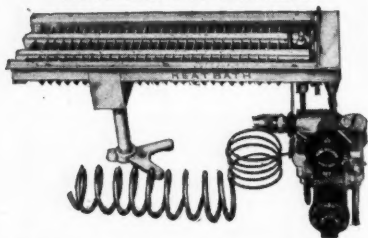
Built to Your Specification and Size

**BAGWELL-GENERAL
STEEL CO., INC.**

Box 391 • Sapulpa, Okla.

THE 1950 LINE

Heatbath CONVERSION BURNERS



LPD-30 for Propane Gas • 30,000 B.T.U.'s
A burner for straight Butane or Propane gases for kitchen heating. Capacity up to 36,000 B.T.U.'s per hour.
Designed for coal, combination and bungalow ranges. Quickly installed and guaranteed fool-proof.

Few territories open. Write for descriptive literature and prices.

HEATBATH APPLIANCES, INC.

P. O. Box 78

Springfield I, Mass.

Code of Safe Practices Published by LPGA

Distinctive reproductions of the "Code of Safe Practices" recently adopted by the Liquefied Petroleum Gas Assn., which can be signed, framed and displayed in their places of business by complying industry companies, have been mailed to a long list of LP-Gas concerns throughout the nation, Howard D. White, executive vice president, has announced.

Drafted by LPGA's safety committee, headed by H. Emerson Thomas, after a long period of study, the code covers all phases of the industry's responsibilities to customers, the public, the community and the nation. Its signers pledge the following:

Personnel: Provide competent employees to install safely and service promptly LP-Gas systems and appliances; and conduct adequate training programs to insure the highest standards of safety and service.

Equipment and Installation: Observe the standards in Pamphlet No. 58 (issued by National Fire Protection Assn.) or the regulations of the regulatory authority having jurisdiction and conform fully with such standards or regulations in the selection and use of pressure vessels, regulating and safety equipment; and fill only those systems that are constructed and installed in accordance with such standards or regulations and are in proper and safe working condition.

Appliances: Provide new gas burning appliances, accessories, and equipment that comply with the requirements of the American Gas Assn. or other competent authority; and service only appliances or equipment so constructed for liquefied petroleum gas; and before connecting to any appliance that was originally manufactured for operation with a gaseous fuel other than liquefied petroleum

**BE SAFE!
BE SURE...**

Enjoy
Insurance Protection
to Fit Your Needs...
COMPREHENSIVE GENERAL LIABILITY

Including

- Installations and Customers' Liability
- Products • Motor Vehicles • Physical Damage

Get insurance coverage tailor-made to protect against loss due to all hazards for which you as operator, distributor or dealer may be liable or assume under contract. For free application blank covering all questions about the coverage you want, write **TODAY**. No obligation, of course.

LOUIS H. COLLAR, Manager

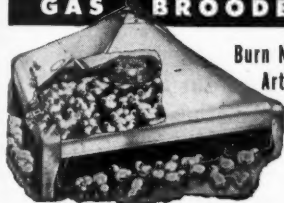
**LIQUEFIED PETROLEUM GAS
Insurance Underwriters
AGENCY**

New York Life Bldg.
Kansas City 6, Mo.

20 W. 9th St.
Phone: Victor 3563

Home: 1913 Taurone Ave., Kansas City, Kansas
Phone: Drexel 3331

**BROWER
GAS BROODERS**



Burn Natural or
Artificial Gas

SAFE—100% Shut-Off Valve

100% Shut Off Valve (Robertshaw) makes the Brover Brooder the safest on the market. Thermostat maintains even temperature. Automatic pilot light operation. Baffle plate and radiants spread heat evenly. Heat-saving insulated steel canopy with curtains, 60" x 60". Draft-proof ventilation. Adjustable legs. Thermometer. Three models including economy model with 56" canopy.

Write for catalog and low dealer prices.

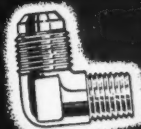
BROWER MFG. CO.

430 No. 3rd

Quincy, Ill.

World's Largest Line of Poultry Supplies

**BRASS
FITTINGS**



**COPPER
TUBING**

All types Brass Fittings, Connectors, Valves, Copper and Aluminum Tubing, Installation Tools and Materials for Gas, Oil and Water Appliances of All Types and Makes.



**PRICED TO SAVE YOU
REAL MONEY!**

**SOUTHWESTERN
OFFICE & WAREHOUSE**
548 Burlison
San Marcos, Texas

Write for
catalogs and prices

S. H. LEGGITT CO.
MARSHALL • MICHIGAN

need **AUTOMATIC**

CONTROL



TX-5



A-100



BX-69



L-34

T-70

check

GENERAL CONTROLS

801 Allen Avenue, Glendale 1, California

Manufacturers of Automatic Pressure, Temperature,
Level and Flow Controls

FACTORY BRANCHES: Baltimore 5, Birmingham 3, Boston 16, Buffalo 3, Chicago 5, Cincinnati 2, Cleveland 15, Dallas 2, Denver 4, Detroit 21, Glendale 1, Houston 6, Kansas City 2, Minneapolis 2, Newark 6, New York 17, Philadelphia 23, Pittsburgh 22, St. Louis 3, San Francisco 7, Seattle 1, Tulsa 6, Washington 6. **DISTRIBUTORS IN PRINCIPAL CITIES**

Mallinckrodt ETHYL MERCAPTAN purified



it says LOOK OUT

- The accepted standard odorant for natural or liquefied petroleum gas — gives sure but harmless warning.
- Purified — Moisture-free — PROTECTS FIXTURES. Meets all 15 qualifications of National Bureau of Standards.

MALLINCKRODT CHEMICAL WORKS

Mallinckrodt St., St. Louis 7, Mo.
72 Gold St., New York 8, New York



ADAMS

RADIANT HEATERS

New and improved finishes are the finest in our history. Heavy backwall throws effective heat radiation. Quality and top performance in Adams products since 1898.

Write today for full information.

ADAMS BROS. MFG. CO., INC.

1500 NORTH AVE., W. PITTSBURGH 33, PA.

gas, check to see that it is in good condition and that it is properly converted, adapted, and tested for performance with liquefied petroleum gas.

Automotive: Maintain automotive equipment in first class condition; inspect tank truck accessories with adequate frequency to insure proper operation of safety equipment and otherwise conform with the regulations established by the local authority having jurisdiction.

Tools: Maintain bulk plant equipment in first class condition and at all times provide proper and adequate tools to install and service LP-Gas systems and appliances.

Regulations: Carefully observe the safety standards of the National Fire Protection Assn., American Gas Assn., Underwriters Laboratories, Inc., and the safety regulations of local authorities having jurisdiction.

Copies of the certificate may be obtained by writing to Liquefied Petroleum Gas Assn., 11 S. LaSalle St., Chicago. They are provided free as a service to the industry.

Second Kansas Engine Fuel School Scheduled for Jan. 21-23

The Liquefied Petroleum Gas Assn. will sponsor a second LP-Gas engine fuel service school at Kansas State College, Manhattan, Jan. 21-23. The school will be conducted by the college under the direction of Professor George Larson.

All phases of internal combustion engine operation will be covered by lectures and demonstrations.

Enrollment is limited to 200 students so early registration is urged. The \$10 fee includes registration fee and three meals.

FOR SALE—TANKS AND CYLINDERS

IMMEDIATE DELIVERY ON ICC 4B 240 cylinders manufactured to carry 100 lbs. of propane. These cylinders weigh from 135 to 140 lbs. each and were manufactured by the Weatherhead Co., Cleveland, Ohio, in August 1947. They are equipped with Bastian-Blessing valve and cap painted aluminum. We have 5000 such cylinders for sale, \$10 each in any quantity. F.O.B. Cincinnati, Ohio. Rural Natural Gas Co., P. O. Box 867, Cincinnati 1, Ohio.

FOR SALE—IMMEDIATE DELIVERY ON new ICC-4B240 20, 25, 40, and 100 lb. propane cylinders. One or a carload. Copper tubing, Bastian-Blessing "Rego" regulators, nationally advertised gas ranges. Northern Ohio Bottled Gas Supply, Phone 228, Clarksfield, Ohio. Mailing address: Wakeman, Ohio.

FOR SALE—PACIFIC 50 GALLON PRO-pane cylinders. Complete with valves \$25.00. Baker's, Malone, N. Y.

FOR SALE — TRUCKS & TRAILERS

BUTANE DELIVERY TRUCK & TANK FOR sale. 1946 Reo, 2½ ton, good condition, with 1447 W.G. single 119 lb. butane tank, skirted built 2 years ago by Nat. Butane Gas Co. Pump, meter, hose, nearly new, all ready to go. \$1995 for whole rig. Also have twin propane delivery truck, 1 year old. Do you need ranges, bottles? We have them. Call Preston Grace—White River Distributors, Phone 570, Batesville, Ark.

PROPANE DELIVERY TRUCK FOR SALE. 1250 gallon twin propane truck tank, U69-250 lb. wp. with Smith pump, Pittsburgh meter, 150' hose. Tank and all equipment purchased new in 1950, mounted on 2-ton Chevrolet, 1950 model with 15,000 miles, Algas carburetor, priced at \$600 under new cost. Preston Grace, Phone 570, Batesville, Ark.

FOR SALE — MISCELLANEOUS

FOR SALE, SUBJECT TO PRIOR SALE, f.o.b. Minneapolis, Minnesota, factory reconditioned, one 40,000 CFH McKee Cone Type diluter, Cat. No. 18621-7½, diluting valve 325, mixture outlet eight inches, delivery pressure 16 ozs., complete with 7½ hp. explosion proof Class I, Group D motor, also air filter and zero governor. Price \$1500. Also one 80B Metric iron case meter, 100 psi working pressure, capacity 2500 CFH at 2" differential at 70% present list price. Write United Petroleum Gas Company, 806 Andrus Bldg., Minneapolis 2, Minn.

"LEAK DETECTO BRUSH" \$3.50 EACH. Quantity discounts on request. "Detecto Solution" 5-gal. \$6.75. 1-gal. \$1.75. Visit our Booth 829 in Atlantic City Oct. 2-6. Gas Appliance Stores, Inc., 706 Harden St., Columbia, S. C.

MISCELLANEOUS—Continued

FOR SALE—BAKER METHANOL PUMPS. When a freeze-up occurs, instead of changing tank and regulator, take your Baker pump and insert 3 cents worth of methanol (available anywhere) into the moisture contaminated tank and the job is done. A Baker pump will pay for itself on several calls. Saves time, labor and product. Only pump of its kind on the market and hailed by LP-Gas dealers throughout the U. S. and Canada as the real solution to the moisture problem. Eliminates costly driers and gadgets. Many dealers equip each truck with a methanol pump. Baker pumps carry a one month supply of methanol and are hydraulically designed to pump methanol into any size cylinder against any pressure. Send \$39.50 for pump complete with fittings to Baker Engineering, Malone, N. Y.

FOR SALE — IMMEDIATE DELIVERY — Eureka smokehouse burner assemblies. For meat smokehouses using bottled gas. Completely automatic. Clean, filtered smoke. Distributes heat uniformly. Low gas consumption. Automatic temperature and pilot control. Less product shrinkage. Easily installed. Write for descriptive pamphlet. Eureka Equipment Co., P. O. Box 396, Beloit, Wis.

EQUIPMENT WANTED

WE DESIRE 1000- to 1500-GALLON PRO-pane fill truck tank. We have for exchange one 1948 Dalworth 1800-gallon twin tank trailer, total 3600 gallons. Key West Gas Co., Key West, Fla.

PROFESSIONAL SERVICES

INSURANCE: FIRE—THEFT—COLLISION —Public liability—property damage—butane-propane dealers and distributors. C. O. Jones & Son Insurance Agency, Inc., 711 Bryant Building, Kansas City 6, Missouri. Phone Victor 5744.

BUILDING A BULK PLANT? LET US serve you as we have so many others. H. Emerson Thomas & Associates, Westfield N. J. Telephone 2-2800.

LET ME INCREASE YOUR PROFITS — Floyd F. Campbell, management and sales consultant. 1495 Forest View Drive, St. Louis 22, Missouri.

Business Expansion Brings Move to New Quarters

A move necessitated by increased business was made recently by A. J. Ramroth, LP-Gas dealer in Troy, N. Y. New and larger quarters are located at 31 Hoocick St.

BUTANE-PROPANE News

Index to Volume XII

January Through December, 1950
Jenkins Publications, Inc., Publisher
198 South Alvarado St., Los Angeles 4, Calif.

AGA Testing Laboratories	Page	Authors—Continued	Page
AGA's Approval Seal Builds Customer Confidence, by Edwin L. Hall...July	58	Both Profit from Crop Drying Operations...Oct.	52
AGA Laboratories Save Time for Appliance Manufacturers...Feb.	63	Bone, A. E., Ten-Year Forecast...Jan.	37
Agricultural Uses		Buzzard, Eathel, Formula for Success...Mar.	38
Another Summer Load Builder Lies in Portable Crop Dryer, by Charles F. Bishop...June	37	Cary, Robert N., What's the Matter With the Liquefied Petroleum Gas Business?...Feb.	58
Butane Heats Molasses for Stock Feeding...July	124	Clevenger, Keith, Service, Safety, Sales, Part 1...Aug.	44
Dairy Sterilizer Builds Good Will...Feb.	46	Part 2...Sept.	70
Dealers and Farmers Both Profit from Crop Drying Operations, by Charles F. Bishop...Oct.	52	Part 3...Oct.	61
Drying Cotton Before Ginning Raises Quality and Price, by Zoe Johnson...June	31	Part 4...Nov.	89
Gas Corn Dryer Opens New Field, May Heat Radiation in Brooder Houses, by Craig Espy...Feb.	72	Part 5...Dec.	84
Iowa Poultryman Has Tried Them All, by Richard Fincham...Oct.	51	Cook, W. D., How to Reduce Distribution Costs...Nov.	64
Authors		Creighton, Gene, Dealer's Customer "Dead File" Is Source of Pre-Christmas Sale...Dec.	42
Abell, Carl, Hard Starting Made Easy...July	108	Creighton, Gene, Gas Water Heaters Get "Top Billing"...Nov.	45
Abell, Carl, First Overhaul at 250,000 Miles...Feb.	102	Creighton, Gene, Paying Employees Bonuses Brings Dealer Bigger Profits...May	68
Abell, Carl, Hard Starting Made Easy...April	98	Dematthew, Joe, New England Dealers Take Initial Steps for Association...Mar.	86
Abell, Carl, Raise Compression Ratio to Raise Engine Efficiency...June	96	Eaton, T. D., Virginians Given 10 Rules to Follow...Jan.	76
Abell, Carl, Selling Conversions in Midwest Territory...Mar.	120	Ellis, S. W., Don't Bargain: Demonstrate!...June	33
Abell, Carl, Should Gas Dealers "Sell Power"?...Oct.	100	Ellis, S. W., Whipping the Trade-In...Nov.	46
Ashe, Harold J., How to Save Money on Your Tax Returns...Feb.	39	Espy, Craig, Vacationland Promotes May Bring Group Insurance for Dealers...Aug.	85
Baer, Joe, Display Appliances to Make Sales...Feb.	110	Espy, Craig, Central States Dealers Given Sales Pointers...July	158
Baer, Joe, Nets 37,000 Prospects from Fair...April	33	Espy, Craig, Heat Radiation in Brooder Houses...Feb.	72
Baer, Joe, Features Appliance Sales to Keep Cash Coming In...Oct.	58	Espy, Craig, LP-Gas was Important Topic at NGAA Annual Meeting...July	128
Baer, Joe, Get New Prospects Through Old Customers...Feb.	130	Espy, Craig, Vacationland Promotes Wide Advertising Plan...Aug.	111
Bartlett, C. E., Performance Rating of Automatic Water Heaters...Dec.	43	Espy, Craig, Vacationland Promotes the Fuel...Nov.	62
Birnbaum, Morris, Dealer "Sells 'Em Comfort" to Build Commercial Load...July	51	Fair, Ernest W., Making Collections Without Making Enemies...Dec.	92
Bishop, Charles F., Another Summer Load Builder Lies in Portable Crop Dryer...June	37	Fetherston, F. R., Relation of Fuel Density to Appliance Location...May	92
Bishop, Charles F., Dealers and Farmers		Tried Them All...Oct.	51
		Fincham, Richard, Iowa Poultryman Has Fletcher, D. W., Installation and Servicing of Consumer Systems, Part 1...April	88

Authors—Continued	Page
Fletcher, D. W., Installation and Servicing of Consumer Systems, 2	May 139
Gibbs, L. M., Dealer Revamps Deliveries to Save Time and Money	May 72
Gibbs, L. M., Delivery Records Show Way to Future Profits	Oct. 45
Glanzer, Phil, Bottled Gas Ends Wood Chopping for Canadian Farmers	Dec. 88
Goss, H. P., Power: How to Win Power and Influence Economy	Jan. 102
Gray, P. E., How to Figure Pressure Drop in Gas Pipelines	Mar. 42
Hall, Edwin L., AGA's Approval Seal Builds Customer Confidence	July 58
Hall, O. D., Factory-Built Engines Help Conversion Dealers to Meet Tractor Demands	April 111
Hall, O. D., Fire Marshals Endorse LP-Gas Safety by Using it in Their Own Cars	Sept. 128
Hall, O. D., Oklahoma-Texas Dealers See Demonstrations of LP-Gas Tractors	May 128
Hall, O. D., Serving Customer Interests Promotes Best Gas Business	Feb. 78
Hawley, Edwin E., Bremerton Housing Authority Converts Two Projects	Oct. 84
Helmer, H. J., Overflow Crowds Attend Two-Day Cooking School	Jan. 52
Hendel, Lawrence, Sells Gas Against Oil for Heating—And on a Cylinder Basis Only	July 84
Hilderbrand, Myra, Goose Gets Good Gallery	Sept. 86
Hoar, Earl, Bigger and Better Accounts Replace Customers Lost to Natural Gas Along New Mains	Nov. 117
Jamison, E. A., Propane in Industry—Why LP-Gas Does a Better Porcelain Enameling Job	Feb. 89
Jenkins, Jay, LP-Gas is Economic Necessity to Central American Countries	Mar. 36
Jennings, Henri H., Sales Slants: The Lost Art of Salesmanship	Feb. 85
Johnson, E. G., Careful Sizing of Heating Equipment Essential to Satisfactory Installations	July 72
Johnson, Zoe, Drying Cotton Before Ginning Raises Quality and Price	June 31
Johnson, Zoe, Make Clean Fight for Business	Dec. 122
Johnson, Zoe, Sawmill and Dairy Users Increase Profits Through Butane Use	April 51
Joseph, James, Cotton Ginning is a Load Builder	Jan. 33
Joseph, James, Lower Fuel Prices Spur Wide Interest in Engine Conversions	May 120
Joseph, James, Wildcatting with Converted Engines	Aug. 94
Kelly, John W., Don't Worry Over Competition—Fight it!	Feb. 94
Kilfoil, W. P., Canadian Municipal Buses Will Try Propane for Fuel	April 63
Lady, Paul, South Pacific Dealers Hear Safety Talks	Mar. 101

Authors—Continued	Page
Lindgren, Carole D., Chicago Orders 500 Propane Buses	Sept. 116
Lowry, Grier, "Cookgas Time" Every Day	Dec. 31
Luxon, Lester L., Sell Safe Practices to Small Industry, Part 1	Jan. 56
Luxon, Lester L., Sell Safe Practices to Small Industry, Part 2	Feb. 47
Macalister, W. F., Farthest North LP-Gas Transport Sets Pattern for Canadians	Sept. 106
Mattocks, E. O., Safe Handling of LP-Gases, Part 2	Jan. 63
Mattocks, E. O., and K. W. Rugh, What Happened in 1949	Feb. 35
Meeder, Ralph E., Reducing Service Problems with Properly Installed Regulators, Part 1	April 64
Meeder, Ralph E., Reducing Service Problems with Properly Installed Regulators, Part 2	May 96
Mericle, Dale C., Portable Dictating Machine "Glamorizes Field Reports	Jan. 115
Miller, Sheldon, Stock Tank Heaters	Dec. 74
O'Haver, H. M., Utilities and Fringe Area Dealers Work Together Like Brothers	Jan. 69
Parkhill, C. L., LP-Gas—A Better Fuel for Power	June 112
Pliske, Bret, Gas is Best Fuel for Fighting Frost	June 42
Potter, H. Vinton, Old Stove Roundup	Sept. 48
Rugh, K. W., Total LP-Gas Sold is Two-Thirds of Natural Gas Volume	June 66
Rugh, K. W., and E. O. Mattocks, What Happened in 1949	Feb. 35
Salisbury, L. E., Selling Through Service	July 94
Schlich, Victor A., To Build or Not to Build a Bulk Filling Plant	Mar. 64
Shyke, I., Georgia Tobacco Experiments Uncover Huge Potential Markets	April 57
Sides, W. C., Regulator Freeze-Up Woes Whipped by Reader's Own Alcohol Injector	Jan. 61
Slawson, H. H., Will Use Propane as Solvent for Industrial Products	Feb. 128
Smith, Don B., Mexican Firm Capitalizes upon Tomorrow's Market Today	Oct. 42
Snowberger, Ernest W., Standby at Eureka, Calif., Solves Increased Demand	Feb. 108
Spooner, Harry L., Farmers Use Converted Tractors for Many Power Applications	July 118
Spooner, Harry L., Live Advertising Ideas Help Illinois Dealer Build Business	June 60
Spooner, Harry L., Saves \$11,500 per Year by Using Butane	Sept. 120
Spooner, Harry L., "Super-Service" Builds Business on Electric Lines	April 44
Sutton, J. C., Jr., Michigan LPGA Holds Annual Meeting	Mar. 96

Authors—Continued	Page
Tackett, T. G., Unity, Sincerity Determine Future	Dec. 57
Thomas, C., Service Formula Pays Off	Oct. 37
Thomas, H. R., and W. R. Thorne, A Glimpse of the Future	Nov. 51
Thompson, H. F., New Refinery Production Will Serve Northeast Dealers	Sept. 80
Thompson, J. Arthur, Propane Standby for Ceramics Industry	April 38
Thompson, Paul K., Safeguarding the Future Through World War II Experiences	Nov. 41
Thorne, W. R. and H. R. Thomas, A Glimpse of the Future	Nov. 51
Tiley, Harold, Stress Economy, Efficiency, Dependability to Sell the Gas Range	Sept. 64
Titus, Ed, Beyond the Maina.....	Monthly
Titus, Ed, Cooking Is Principal Load for LP-Gas in Denmark.....	Aug. 52
Titus, Ed, Dealers Warned of Electric Tactics	Dec. 63
Titus, Ed., Gas Is Getting Firm Foot-hold for Heating in Northeast.....	July 55
Titus, Ed, Outgunning the Electric Range	Sept. 52
Titus, Ed, Peter Anderson Elected LPGA President	June 74
Titus, Ed, How to Plan Deliveries for Greater Profit	Mar. 50
Victor, Stephen A., Free Cylinder Delivery Doubles Production	Aug. 49
Victor, Stephen A., Why Poland Spring House Chooses Gas	Dec. 38
Voice, E. W., Distribution Will Be Bottled Neck If Hard Winter Comes in '51	Dec. 51
Warren, Minnette L., Demonstrations Best Way to Sales, Says Florida Gas Dealer	Feb. 67
Warren, Minnette Lake, Establish Customer Confidence!	June 57
Welch, Robert F., "Don't Fight the Gas Utility!"	Sept. 103
Wilcox, J. H., Use of Special Couplings in Town Plant Distribution System	Jan. 137
Willis, Carroll, Short Cuts to Selling	July 42
Winton, Irene B., Salesmen Can Be Made	Aug. 58
Woodring, F. K., Selling More Fuel at Lower Rates Will Net Dealer Larger Profits	July 102

Bulk Plant, Filling Plant

Canada's Imperial Oil Will Install Ontario Propane Plant	April 148
Denver Storage for LP-Gas Planned by Phillips Petroleum	June 54
Free Cylinder Delivery Doubles Production, by Stephen A. Victor.....	Aug. 49
Georgia Gas & Appliance Installs 18,000-gal. Bulk Plant	Nov. 130
Israel Has Domestic Market.....	Jan. 51
Kansas Dealer Expands with New Store and Filling Plant	Mar. 130
Liquefied Gas Corp., Seattle, Opens New Bulk Plants	Oct. 122

Bulk Plants—Continued	Page
Nova Scotia Firm Installing Bulk Plant to Serve Wide Area.....	Jan. 118
Storing Propane-Air Gas Underground	Feb. 116
To Build or Not to Build a Bulk Filling Plant, by Victor A. Schlich.....	Mar. 64

Central Plants and Standby Plant

Bremerton Housing Authority Converts Two Projects, by Edwin E. Hawley	Oct. 84
Florida Town Plans Changeover from Manufactured Gas	Sept. 113
Heating Will Be Heavy Load for Neligh, Neb., Town Plant	April 126
Nelson, B. C., Changes Town Plant from Coal Gas to Propane-Air.....	Nov. 114
Standby at Eureka, Calif., Solves Increased Demand, by Ernest W. Snowberger	Feb. 108
Twenty Northwest Town Plants in Path of Canadian-U. S. Gas Pipeline.....	Aug. 56

Commercial Installations

Cotton Ginning Is a Load Builder, by James Joseph	Jan. 33
Gas Torches Replace Early Branding Irons	Oct. 77
Georgia Tobacco Experiments Uncover Huge Potential Markets, by I. Shyke	April 57
Large Capacity Ransome Burners Aid Industrial Needs	Mar. 116
Propane in Industry—Why LP-Gas Does a Better Porcelain Enameling Job, by E. A. Jamison	Feb. 89
Sell Safe Practices to Small Industry, Part 1, by Lester L. Luxon.....	Jan. 56
Sell Safe Practices to Small Industry, Part 2, by Lester L. Luxon.....	Feb. 47
There's a Commercial Cooking Load in Every Town	Sept. 60
Why Poland Spring House Chooses Gas, by Stephen A. Victor.....	Dec. 38
Will Use Propane as Solvent for Industrial Products, by H. H. Slawson.....	Feb. 128

Fire Prevention (See Safety, Regulations)

Foreign Operation

Brazil Firm Signs Up 1500 New Customers per Month	Nov. 55
California Propane Skid Tanks Bound for Puerto Rico	Oct. 57
Cooking Is Principal Load for LP-Gas in Denmark, by Ed Titus	Aug. 52
Gas Sales Spreading on Honduras North Coast	Sept. 148
Italians Will Utilize Home-Made Propane	Nov. 49
LP-Gas Is Economic Necessity to Central American Countries, by Jay Jenkins	Mar. 36
Mexican Firm Capitalizes Upon Tomorrow's Market Today, by Don B. Smith	Oct. 42

Heating

Build Heating Load Slowly!.....	July 64
Careful Sizing of Heating Equipment	

Heating—Continued	Page
Essential to Satisfactory Installation, by E. G. Johnson.....	July 72
Dealer "Sells 'Em Comfort" to Build Commercial Load, by Morris Birnbaum	July 51
Coal: Boost Your Batting Average.....	July 49
Gas Is Getting Firm Foothold for Heating in Northeast, by Ed Titus.....	July 55
Oil: You Hold a Strong Hand.....	July 50
Sell 'Em Comfort	July 40
Sell the House Heating Market.....	July 39
Selling More Fuel at Lower Rates Will Net Dealer Larger Profits, by F. K. Woodring	July 102
Selling Through Service, by L. E. Salisbury	July 94
Sells Gas Against Oil for Heating—And on a Cylinder Basis Only, by Lawrence Hendel	July 84
Short Cuts to Selling, by Carroll Willis	July 42
Wood: You Can Knock Him Out	July 48
You Can Outpoint Electricity.....	July 47

Insurance

From an Insurance Standpoint—What's the Matter with the Liquefied Petroleum Gas Business? by Robert N. Cary	Feb. 58
---	---------

LPGA & Sections

Anderson, Peter, Elected LPGA President, by Ed Titus	June 74
Atlantic Coast Districts Draw Convention Crowd	Nov. 74
Brand, Lee, Named Chairman LPGA National Promotion	Mar. 94
Canadian Western Division, LPGA, Appoints Committees	Oct. 76
Central States Dealers Given Sales Pointers, by Craig Espy	July 153
Central States District Plans June Convention	May 105
Crawford, J. C., Named District Secretary of New LPGA Group.....	Sept. 93
Exhibitors at LPGA Trade Show.....	May 79
Fields, Thos. G., Named LPGA Secretary for S. E. District.....	Nov. 84
Industry Lapel Pin Available to LP-Gasmen	Mar. 90
LPGA Directors Meet in Tulsa.....	April 78
LPGA Explains Integration Plan for State Associations	April 128
LP-Gas in Key Position to Aid National Emergency	Nov. 39
Money for Advertising Fund Starts Pouring In	April 133
National Promotional Program for LP-Gas Gets Under Way	Mar. 92
Northwest Dealers Turn Out to Portland LPGA Meeting	Mar. 150
Prominent Speakers and Trade Show Will Feature May 8-11 Convention	May 167
South Pacific Dealers Hear Safety Talks, by Paul Lady	Mar. 101
Tanner, Robert, Is Secretary, Central States District, LPGA	May 112
Western Dealers Turn-Out Strong.....	July 154

Measurement of LP-Gas

Pennsylvania Group Working for Measurement Agreement	Jan. 71
--	---------

Measurement—Continued	Page
Tentative Standards Adopted for LP-Gas Weights, Measures	Nov. 96
Weighing Ways to Measure LP-Gas	Oct. 88

Miscellaneous

Anti-Trust Suits Filed Against Two Arizona Firms	July 106
Arguments to Combat Electric Sales	Nov. 58
Bigger and Better Accounts Replace Customers Lost to Natural Gas Along New Mains, by Earl Hoar.....	Nov. 117
Bottled Gas to Be Sold by Florida Power Co.	Feb. 41
Bottled Gas Ends Wood Chopping for Canadian Farmers, by Phil Glanzer	Dec. 88
Butane-Propane News Receives Award for 1949 Safety Issue	July 122
California Suburban Gas Co. Buys Big Bear Lake Unit	June 54
"Cookgas Time" Every Day, by Grier Lowry	Dec. 31
Customer Reads the Meter.....	Feb. 44
Dealers Warned of Electric Tactics, by Ed Titus	Dec. 63
Delivery Records Show Way to Future Profits, by L. M. Gibbs.....	Oct. 45
Distribution Will Be Bottle Neck If Hard Winter Comes in '51, by E. W. Voice	Dec. 51
Distributor Nets 37,000 Prospects from Exhibit at Fair, by Joe Baer.....	April 33
"Don't Fight the Gas Utility!" by Robert F. Welch	Sept. 103
Farthest North LP-Gas Transport Sets Pattern for Canadians, by W. F. Macalister	Sept. 106
Former Gas Users Demand Propane in Alaska	May 67
Fuelane Dealer Convention Hears Sales and Service Talks	June 128
Gas is Best Fuel for Fighting Frost, by Bret Pliske	June 42
Gas vs. Gas—Bottled Gas Wins!.....	May 164
Gas Water Heaters Get "Top Billing," by Gene Creighton	Nov. 46
High Standards—The Best Competitive Weapon	Jan. 40
Home Service Program Promised by GAMA	April 152
How Many Dealers Know Their Cost of Doing Business	Oct. 71
How to Save Money on Your Tax Returns	Feb. 39
Huge LP-Gas Storage Acquired by D. E. Buchanan Interests	June 154
It's a $\frac{3}{4}$ -Billion Dollar Giant.....	Mar. 48
Katz, Dr. Donald L., Given Hanlon Award	June 132
LP-Gas Smash Hit in Wales	Oct. 40
Luxon, L. L., Named Technical Editor, Butane-Propane News	Jan. 118
Make Clean Fight for Business, by Zoe Johnson	Dec. 122
Making Collections Without Making Enemies, by Ernest W. Fair.....	Dec. 92
Oberfell, G. G., Gas Authority, Retires from Phillips	Sept. 113
Paying Employees Big Bonuses Brings Dealer Bigger Profits, by Gene Creighton	May 63

Miscellaneous—Continued

Page

Performance Rating of Automatic Water Heaters, by C. E. Bartlett.....	Dec. 43
Phillips Petroleum Takes Over Synthetic Rubber Plant	Oct. 71
Pipe Line Capacities in Cubic Feet.....	Dec. 127
Portable Dictating Machine Glamorizes Field Reports, by C. Dale Mericle, Jan.	115
Pottergas Service, New York, Sold to Suburban Propane	June 95
Propane, Anhydrous Ammonia Valves Compared	Dec. 114
Propane Standby for Ceramics Industry, by J. Arthur Thompson	April 38
Rainmaker Experiments with Propane	June 35
Recovery Methods Give Dealers New Viewpoint	Oct. 93
Safeguarding the Future Through World War II Experiences, by Paul K. Thompson	Nov. 41
Sawmill and Dairy Users Increase Profits Through Butane Use, by Zoe Johnson	April 51
Servel Denies Charges of Price-Fixing	Aug. 134
Servel Distributors Win Anti-Trust Test Case	Nov. 127
Serving Customer Interests Promotes Best Gas Business, by O. D. Hall, Feb.	78
Sinclair Oil Purchases Half Interest of Lisbon Gas	June 126
South Dakota Firm Buys 36 R.R. Cars of Storage Tanks	Aug. 136
Stock Tank Heaters, by Sheldon Miller	Dec. 74
Ten Years Ago	Mar. 46
Tennessee Dealer Prospers in Electric Stronghold	April 84
Unity, Sincerity Determine Future, by T. G. Tackett	Dec. 57
Vacationland Promotes the Fuel, by Craig Esnv	Nov. 62
Vaporizer Will Generate Fuel Gas from Crude Oil	Feb. 127
"Veteran" Dredge Goes LP-Gas.....	Feb. 43
You Can't "Snow" Norcal Gas Co., April ..	42

National Butane-Propane Association

NBPA Becomes Co-Sponsor of National Promotional Plan	Nov. 115
NBPA Issues Booklet Covering Pipe Sizing Standards	July 93
NBPA Pledges Help to Government—Charles Grau Is New President. Nov.	56
NBPA Selects Cleveland for 1950 Convention City	Mar. 83
NBPA Substitutes Three District Meetings for Regular Annual Convention	July 154

Natural Gasoline Plants

Imperial Oil Builds Plant to Process Alberta Oil	Aug. 64
Mid-Continent Joint Processing Plant Will Extract LP-Gas from Rich Field	Feb. 54
New Company Will Manufacture, Distribute LP-Gas in Hawaii.....	Oct. 94
New Refinery Production Will Serve Northeast Dealers, by H. F. Thompson	Sept. 80

Obituaries

Boyd, E. M., Kentucky Dealer, Passed Away in May	Aug. 91
Brumder, H. O., President, Pressed Steel Tank, Died Jan. 4.....	Feb. 134
French, Jerry, Passes Away	June 135
Hood, Francis James, President of Anasul Chemical Co., Died Suddenly Nov. 10	Feb. 144
Honsberger, H. A., Suburban Propane, Died in August	Sept. 146
Kapnek, Sam, Pioneer Gasman, Passed Away Aug. 16	Oct. 78
McCord, E. M., El Dorado, Ark., Killed in Auto Accident	Nov. 127
O'Hagan, J. E., Former Grayson Executive, Passes Away	Feb. 61
Phillips Petroleum Founder, Frank Phillips, Died Aug. 23.....	Oct. 96
Schaller, William, California Dealer, Passes Away Suddenly.....	Oct. 76
Tooke, Casper, Propane Dealer, Dies in Shreveport, La.	July 106
Wood, Norman B., Hamilton Manufacturing, Passes Away	Nov. 138

Power

Baker, of Plainview, Texas, Enters Tractor Field	Aug. 106
Bus System in Los Angeles Orders First Propane Units	June 126
Canadian Municipal Buses Will Try Propane for Fuel, by W. P. Kilfoil, April ..	63
Case Tractors Now Available for Use with LP-Gas	Nov. 111
Century Announces New Model of Dual Throat Carburetor	April 117
Chicago Orders 500 Propane Buses, by Carole D. Lindgren	Sept. 116
Cold Manifolds Available from Nicson Engineering	Nov. 108
Conversion Kits Simplify Field Installations	Oct. 106
Conversions Pay Off Big for Kansas Dealer	Nov. 98
Converting Bus Engines to Burn Butane or Propane, by Carl Abell.....	July 108
Dealers Waking Up to Field for Power Installations	July 114
Factory-Built Engines Help Conversion Dealers to Meet Tractor Demands, by O. D. Hall	April 111
Farmers Use Converted Tractors for Many Power Applications, by Harry L. Spooner	July 118
50,000 Watch Tractor Perform.....	Dec. 98
Fire Marshals Endorse LP-Gas Safety by Using It in Their Own Cars, by O. D. Hall	Sept. 128
First Overhaul at 250,000 Miles, by Carl Abell	Feb. 102
Hard Starting Made Easy, by Carl Abell	April 98
How to Win Power and Influence Economy, by H. P. Goss.....	Jan. 102
Hughes Carburetion System Enters LP-Gas Field, by O. D. Hall.....	May 134
Le Roi Returns to Truck Field with LP-Gas Engine	Nov. 108
LP-Gas—A Better Fuel for Power, by C. L. Parkhill	June 112
LP-Gas Filling Station Directory.....	Aug. 108
Planned	Aug. 108
LP-Gas Trailer Units Shipped East for Demonstration	Aug. 103

Power—Continued	Page
Los Angeles Truck Show Features LP-Gas Equipment	Aug. 92
Lower Fuel Prices Spur Wide Interest in Engine Conversion, by James Joseph	May 120
Motor Bus Manufacturer Thinks Propane Best	July 115
Motor Coach Manufacturers Looking to LP-Gas for Fuel	May 132
New Carburetor Company Enters LP-Gas Field	May 134
Oklahoma-Texas Dealers See Demonstrations of LP-Gas Tractors, by O. D. Hall	May 128
Oregon Distributor Will Feature Engine Conversions	Sept. 130
Raise Compression Ratio to Raise Engine Efficiency, by Carl Abell	June 96
Saves \$11,500 per Year by Using Butane, by Harry L. Spooner	Sept. 120
Selling Conversions in Midwest Territory, by Carl Abell	Mar. 120
Should Gas Dealers "Sell Power?" by Carl Abell	Oct. 100
"Spud-In Guides" Are Made to Simplify Vapor Conversions	July 112
Technical Men Study Standards for Motor Coach Safety	Sept. 123
Texas Transit Company Tries Propane in Four Buses	Sept. 122
Two Hundred Seventy-nine Milwaukee Taxis Will Burn Propane	Nov. 106
Wildcatting with Converted Engines, by James Joseph	Aug. 94

Products

Air Conditioner, Winter, Bryant Heater Division	Oct. 126
Air Conditioner, Winter, Rheem Mfg. Co.	July 147
Air Conditioner, Winter, Norge Heat Division	July 142
Baseboard Radiant Panels, American Radiator & Standard Sanitary Corp.	July 132
Boiler, Gas-Fired, Hook & Ackerman	Dec. 117
Boiler, Gas-Fired, Bastian-Morley Co.	July 132
Boiler, Gas-Fired, A. O. Smith Corp.	July 147
Boiler, Steam, Eclipse Fuel Engr. Co.	Mar. 112
Broiler, Commercial, Detroit-Michigan Stove Co.	Nov. 122
Brooder, Flash-Tube, A. R. Wood Mfg. Co.	Dec. 117
Brooder, Gas, Brower Mfg. Co.	Jan. 122
Brooder, Gas, Buckeye Incubator Co.	June 121
Burner, Conversion, Harvey-Whipple, Inc.	Mar. 112
Burner, Water Heater, Republic Heater Co.	Jan. 127
Calculator, Water Heater, Everett A. Kelsey	Jan. 130
Camp Stove, Hansen Burner Products	May 162
Carbonic Gas Cylinder, Fine Products Co.	Jan. 124
Chase for Name Plates, M. E. Cunningham Co.	Aug. 122
Circuit Switch, Rochester Mfg. Co.	Feb. 123
Circulator, Forced Air, Ohio Foundry & Mfg. Co.	July 144

Products—Continued	Page
Circulator, Radiant, Armstrong Products Corp.	July 133
Circulator, Vented, Perfection Stove Co.	Oct. 124
Compound, Sealing, Crane Packing Co.	Aug. 119
Compound, Sealing, I. H. Grancell	Nov. 125
Compressor, Ingersoll-Rand Co.	June 122
Control, Commercial Cooking, Robertshaw Thermostat Div.	Sept. 144
Control, Space Heater, Grayson Controls Division	July 138
Controller, Electric, McDonnell & Miller, Inc.	Oct. 130
Conversion Unit, Chattanooga Implement & Mfg. Co.	April 122
Cooler, Evaporative, Dearborn Stove Co.	May 154
Counter Equipment, Anetsberger Bros.	Oct. 126
Counter Unit, Dickerson Mfg. Co.	Sept. 141
Coupling, Hose, International Metal Hose Co.	April 122
Cylinder Hood Base, Rock Island Metal Foundry	April 120
Cylinder, Lightweight, Manchester Welding & Fabricating Co.	April 121
Detector, Gas, Atlas Exploration Co.	Oct. 129
Detector, Gas, Davis Emergency Equipment Co.	Aug. 130
Drier, Automatic Clothes, Hamilton Mfg. Co.	Aug. 119
Drier, Clothes, Temco, Inc.	Aug. 123
Filling Unit, Cylinder, Weatherhead Co.	Aug. 121
Fire Extinguisher, Portable, Safety First Co.	Oct. 124
Fittings, Swivel, Rasmussen Mfg. Co.	May 162
Flaring Tool, Imperial Brass Mfg. Co.	Jan. 122
Fryer, Deep Fat, Super Chef Mfg. Co.	Mar. 106
Furnace, Floor, American Radiator & Standard Sanitary Corp.	Mar. 104
Furnace, Floor, Bryant Heater Div.	July 133
Furnace, Floor, Coleman Co.	July 135
Furnace, Floor, Empire Stove Co.	Oct. 135
Furnace, Floor, Lawson Mfg. Co.	July 142
Furnace, Floor, Surface Combustion Corp.	July 148
Furnace, Forced Air, Coleman Co.	Jan. 128
Furnace, Forced Air, Lennox Furnace Co.	Jan. 133
Furnace, Forced Air, Norman Products Co.	July 144
Furnace, Gas, Economy Gas Furnace Mfg. Co.	Oct. 135
Furnace, Gas, Perfection Stove Co.	July 144
Furnace, Gas, Security Mfg. Co.	July 148
Furnace, Gas-Fired, Borg-Warner Corp.	Oct. 129
Furnace, Register, Ward Heater Co.	July 152
Gauge, Draft, Bacharach Industrial Instrument Co.	Aug. 121
Generator, Hot Air, Southwest Industrial Heating Engineers	Mar. 110
Heat Booster, Ohio Foundry & Mfg. Co.	Oct. 130
Heater, Cabinet, Chattanooga Implement & Mfg. Co.	Oct. 132

Products—Continued	Page
Heater, Cone Circulator, United States Stove Co.	July 152
Heater, Duct, Reznor Mfg. Co.	Mar. 105
Heater, Gas, Adams Bros. Mfg. Co.	July 133
Heater, Gas, Armstrong Products Corp.	April 120
Heater, Gas, Estate Stove Co.	July 136
Heater, Gas, Stiglitz Furnace & Foundry Co.	Feb. 124
Heater, Gas, Temco, Inc.	Mar. 109
Heater, Panel, Bryant Heater Div.	May 154
Heater, Radiant Gas, Temco, Inc.	July 151
Heater, Radiant - Circulator, Florence Stove Co.	May 157
Heater, Radiant Gas, Temco, Inc.	July 151
Heater, Space, Inland Steel Container Co.	July 141
Heater, Space, Locke Stove Co.	July 141
Heater, Stock Tank, Johnson Gas Appliance Co.	Aug. 122
Heater, Suspended, Reznor Mfg. Co.	July 147
Heater, Unit, Reznor Mfg. Co.	Nov. 125
Heater, Unvented Space, Thermax Mfg. Co.	Nov. 123
Heater, Vented, Dearborn Stove Co.	July 135
Heater, Wall, Holly Mfg. Co.	Nov. 122
Heating System, South Wind Div., Stewart-Warner Corp.	Jan. 124
Heating System, Recessed, Empire Stove Co.	July 136
Heating Unit, L. J. Mueller Furnace Co.	April 125
Heating Unit, Zone, Stewart-Warner Corp.	July 151
Hood, Cylinder, Dixie Mfg. Co.	May 148
Impakdriver, H. K. Porter, Inc.	Dec. 117
Incinerator, Gas - Fired, Bowser, Inc.	May 151
Incubator, Gas-Heated, Brower Mfg. Co.	May 158
Lift Assembly, Reznor Mfg. Co.	Oct. 135
Lighter, Desk, Brown & Bigelow.	Aug. 124
Lighter, Pocket, Stratford Pen Corp.	Oct. 130
Log, Gas, Glo-Fire, Inc.	July 138
Meter, Truck, Neptune Meter Co.	Aug. 118
Mobile Truck Crane, Pitman Mfg. Co.	Dec. 116
Multivalve Outfit, Bastian-Blessing Co.	Aug. 123
Multivalve Outfit, Bastian-Blessing Co.	May 146
POL with Seal Ring, Selwyn-Landers Co.	Mar. 104
Pump, Bulk Station, Byron Jackson Co.	June 121
Pump, Bulk Station, Viking Pump Co.	Oct. 132
Pump, Centrifugal, Peerless Pump Div.	Oct. 125
Valve, Filler, Bastian-Blessing Co.	Oct. 125
Pump, Hand, D. H. Krug Co.	April 125
Pump, Hydraulic, Baker's.	Jan. 124
Pump, LP-Gas, Corken's, Inc.	May 160
Pump, Small Filling, Smith Precision Products	May 157
Range, Apartment-Size, Perfection Stove Co.	June 120
Range, Commercial, Detroit - Michigan Stove Co.	Sept. 141
Range, Commercial Fry-Top, Detroit-Michigan Stove	May 146
Range, Commercial, Madsen Range Co.	Sept. 142

Products—Continued	Page
Range, Commercial, Malleable Steel Range Mfg. Co.	Sept. 142
Range, Domestic, A-B Stove Div.	Sept. 132
Range, Domestic, A-B Stove Div., Detroit-Michigan Stove Co.	Mar. 110
Range, Domestic, Brown Stove Works, Inc.	Sept. 132
Range, Domestic, Caloric Stove Corp.	Sept. 132
Range, Domestic, Caloric Stove Corp.	May 160
Range, Domestic, Chambers Corp.	Sept. 133
Range, Domestic, Detroit-Michigan Stove Co.	Sept. 133
Range, Domestic, Detroit-Vapor Stove Div.	May 147
Range, Domestic, Eagle Foundry Co.	Sept. 134
Range, Domestic, Empire Stove Co.	Sept. 134
Range, Domestic, Empire Stove Co.	May 151
Range, Domestic, Estate Stove Co.	Sept. 134
Range, Domestic, Estate Stove Co.	Feb. 123
Range, Domestic, Florence Stove Co.	Sept. 136
Range, Domestic, Hardwick Stove Co.	Sept. 136
Range, Domestic, Perfection Stove Co.	Sept. 133
Range, Domestic, Perfection Stove Co.	Feb. 124
Range, Domestic, Phillips & Buttorff Mfg. Co.	Sept. 138
Range, Domestic, Premier Stove Co.	Mar. 109
Range, Domestic, Prentiss Wabers Prod. Co.	Sept. 141
Range, Domestic, J. Rose & Co.	Sept. 136
Range, Domestic, Tappan Stove Co.	Feb. 122
Range, Domestic, Tappan Stove Co.	May 154
Range, Domestic, Welbilt Stove Co.	Mar. 106
Range, High Oven, Hardwick Stove Co.	Jan. 123
Range, Luncheonette, Malleable Steel Range Mfg. Co.	May 152
Regulator, LP-Gas, C. A. Norgren Co.	Jan. 127
Safety Valve & Pilot Burner, General Controls Co.	Dec. 118
Safety Valve System, Shand & Jurs Co.	May 147
System Guard Box, Buehler Tank and Welding Works	Jan. 130
Tailgate, Hydraulic, Marion Metal Products Co.	June 120
Tar Pot Outfits, Ransome Co.	Jan. 123
Tool Kit, Gas Kit Co.	Aug. 124
Torch, LP-Gas, Otto Bernz Co., Inc.	May 148
Torch, LP-Gas Blow, Mutual Liquid Gas & Equipment Co.	Aug. 126
Tube Bender, Holsclaw Bros., Inc.	Dec. 118
Valve, Control, L. C. Roney, Inc.	Feb. 122
Valve, Cylindrical, Minneapolis-Honeywell Regulator Co.	April 121
Valve, Electric Fuel, Cyclone Equip. Corp.	Nov. 123
Valve, Filler, Selwyn-Landers Co.	May 152
Valves, LP-Gas, Crane Co.	June 121
Valve, Safety Relief, L. C. Roney, Inc.	Aug. 118
Valve, Safety Shutoff, North American Mfg. Co.	Jan. 133

Products—Continued	Page
Vent, Wall Heater, William Wallace Co.	Dec. 116
Water Heater, Ruud Mfg. Co.	April 120
Water Heater, A. O. Smith Corp.	Aug. 126
Water Heater, A. O. Smith Corp.	Mar. 105
Water Heater, Table Top, Jud Whitehead Co.	Aug. 130
Wrench, Internal Pipe, Roddick Tool Co.	June 122

Regulations, Safety

Alabama LP-Gas Dealers Free of State Taxation	Nov. 57
Arkansas Legislation Revised	Aug. 91
Inspect Georgia Gas Plants Under New 1950 Law	Aug. 51
Kentucky Has New Law	May 117
NFPA Approves Pamphlet 58	Aug. 55
New Edition of Pamphlet 58 Published by NFPA	Oct. 122
New NBFU Bulletin Covers Relief Valve and Tank Design	Oct. 98
New Through Tariffs Published for LP-Gas Industry	Aug. 156
Relation of Fuel Density to Appliance Location, by E. R. Fetherston	May 92
Two States Adopt LP-Gas Laws	Aug. 156
Use Fuel Permits Required in Oregon for LP-Gas Vehicles	April 118
Safe Handling of LP-Gases, Part 2, by E. O. Mattocks	Jan. 63
War-Time Controls	Dec. 78

Sales Promotion, Advertising, Demonstrations

Dealer's Customer "Dead File" Is Source of Pre-Christmas Sales, by Gene Creighton	Dec. 42
Demonstrations Best Way to Sales, Says Florida Gas Dealer, by Minnette L. Warren	Feb. 67
Display Appliances to Make Sales, by Joe Baer	Feb. 110
Don't Bargain: Demonstrate, by S. W. Ellis	June 33
Don't Worry About Competition—Fight It, by John W. Kelly	Feb. 94
Establish Customer Confidence, by Minnette Lake Warren	June 57
Farm Papers Will Carry LP-Gas Advertising	Aug. 134
Features Appliance Sales to Keep Cash Coming In, by Joe Baer	Oct. 58
Flame Symbol Builds Friendship	Oct. 118
Formula for Success, by Ethel Buzzard	Mar. 33
Get New Prospects Through Old Customers, by Joe Baer	Feb. 130
Goose Gets Good Gallery, by Myra Hilderbrand	Sept. 36
Live Advertising Ideas Help Illinois Dealer Build Business, by Harry L. Spooner	June 60
Never Told a Customer "No"	Feb. 70
Old Stove Round Up, by H. Vinton Potter	Sept. 48
Outgunning the Electric Range, by Ed Titus	Sept. 52
Overflow Crowds Attend Two-Day Cooking School, by H. J. Helmer	Jan. 52
Sales Slants: The Lost Art of Salesmanship, by Henri H. Jennings	Feb. 85
Salesman Can Be Made, by Irene B. Winton	Aug. 53
Service Formula Pays Off, by C. Thomas	Oct. 37

Sales Promotion—Continued

Service, Safety, Sales, by Keith Clevenger, Part 1	Aug. 44
Part 2	Sept. 70
Part 3	Oct. 61
Part 4	Nov. 89
Part 5	Dec. 84
Stress Economy, Efficiency, Dependability to Sell the Gas Range, by Harold Tiley	Sept. 64
"Super Service" Builds Business on Electric Lines, by Harry L. Spooner	April 44
Utilities and Fringe Area Dealers Work Together Like Brothers, by H. M. O'Haver	Jan. 69
Whipping the Trade-In, by S. W. Ellis	Nov. 46

Service

How to Figure Pressure Drop in Gas Pipelines, by P. E. Gray	Mar. 42
Installation and Servicing of Consumer Systems, Part 1, by D. W. Fletcher	April 88
Installation and Servicing of Consumer Systems, Part 2, by D. W. Fletcher	May 139
Reducing Service Problems with Properly Installed Regulators, Part 1, by Ralph E. Meeder	April 64
Reducing Service Problems with Properly Installed Regulators, Part 2, by Ralph E. Meeder	May 96
Regulator Freeze-Up Woes Whipped, by Reader's Own Alcohol Injector, by W. C. Sides	Jan. 61
Use of Special Couplings in Town Plant Distribution System, by J. H. Wilcox	Jan. 137

Statistics

(Production, National & State Sales)	
A Glimpse of the Future, by H. R. Thomas and W. R. Thorne	Nov. 51
Appliance Sales to Soar in 1950, Says GAMA	April 133
Demand for Gas Heating Shows Big Increase	May 66
Domestic Sales Gain All Over the World	Aug. 39
Gas Users Increase 57.1% Since 1940	Oct. 59
Milwaukee Consumer Survey Shows Preference for Gas	Aug. 55
Natural Gasoline Production in 1949 Up 7.5% Over 1948	April 130
Ten-Year Forecast, by A. E. Fone	Jan. 37
Total LP-Gas Sold is Two-Thirds of Natural Gas Volume, by K. W. Rugh	June 66
Unit Shipments Reach New Levels for 5-Month Period	Aug. 91
What Happened in 1949, by K. W. Rugh and E. O. Mattocks	Feb. 35

Transportation, Distribution

Dealer Revamps Deliveries to Save Time and Money, by L. M. Gibbs	May 72
Four-Year Management Course Offered Texas Dealers	June 41
How to Plan Deliveries for Greater Profit, by Ed Titus	Mar. 50
How to Reduce Distribution Costs, by W. D. Cook	Nov. 6
Warren Pioneers with LP-Gas Barge	Oct. 90

ADVERTISERS

* Adams Bros. Manufacturing Co., Inc.	148	* Mallinckrodt Chemical Works	148
* American Car & Foundry Co.	—	* Master Tank & Welding Co.	123
* American Liquid Gas Corp.	101	* McNamar Boiler & Tank Co.	18
* American Meter Co.	—	* Minneapolis-Honeywell Regulator Co.	—
* American Pipe & Steel Corp.	24	* Mutual Liquid Gas Equipment Co., Inc.	115
* American Radiator & Standard Sanitary Corp.	68	* National Committee for LP-Gas Promotion, The	—
* Anchor Petroleum Co.	Third Cover	* National L-P Gas Institute	145
* Anco Manufacturing & Supply Co.	3	* Neptune Meter Co.	13
* Bagwell-General Steel Co., Inc.	146	* Nordstrom Valve Division	15
* Bastian-Blessing Co., The	80, 81	* Norman Products Co.	—
* Beacon Petroleum Co.	26	* North Texas Tank Co.	103
* Black, Sivalls & Bryson, Inc.	10, 11, 29	* Ohio Foundry & Manufacturing Co.	95
* Blodgett Co., Inc., The G. S.	107	* O'Keefe & Merritt Co.	89
* Bowser, Inc., Incinerator Div.	—	* Pan-American Casualty Co.	87
* Brower Manufacturing Co.	147	* Panoma Corp.	141
* Brunner Manufacturing Co.	—	* Peerless Manufacturing Corp.	135
* Buehler Tank & Welding Works	—	* Philadelphia Valve Co.	90
* Burnham Corp.	139	* Phillips & Buttorff Mfg. Co.	—
* Butler Manufacturing Co.	—	* Phillips Petroleum Co.	14
* Calor Gas Co.	149	* Premier Stove Co.	144
* Caloric Stove Corp.	—	* Prentiss Wabers Products Co.	—
* Carter Oil Co., The	143	* Pressed Steel Tank Co.	Second Cover
* Century Gas Equipment Co.	—	* Ransome Co.	—
* Cities Fuel Corp.	139	* Reliance Regulator Division	120
* Cities Service Oil Co.	142	* Revere Copper & Brass Inc.	—
* Columbian Steel Tank Co.	—	* Reznor Manufacturing Co.	97
* Commercial Shearing & Stamping Co.	—	* Rheem Manufacturing Co.	—
* Crane Packing Co.	140	* Roadmaster Products Co.	—
* Cyclone Equipment Corp.	102	* Robertshaw-Fulton Controls Co.	149
* Dallas Tank Co.	—	* Rockwell Manufacturing Co.	1
* Deborn Stove Co.	16	* Roney, Inc., L. C.	30
* Detroit-Michigan Stove Co.	129	* Santa Fe Engineering & Equipment Co.	100
* Dickerson Manufacturing Co.	145	* Scaife Co.	6, 7
* Dix Manufacturing Co.	100	* Security Manufacturing Co.	—
* Downingtown Iron Works, Inc.	—	* Selwyn-Landers Co.	—
* Ellis Mifflin Co.	101	* Shand & Jurs Co.	—
* Empire Stove Co.	112	* Siebring Manufacturing Co.	137
* Ensign Carburetor Co.	—	* Sinclair Oil & Gas Co.	12
* Fisher Governor Co.	20	* Smith Corp., A. O. (Gas Tanks)	19
* Gas Equipment Co., Inc.	149	* Smith Corp., A. O. (Water Heaters)	—
* Gas Equipment Supply Co.	145	* Smith Precision Products Co.	8
* Gas-Kit Co.	—	* Sprague Meter Co.	108
* General Controls	147	* Squibb-Taylor, Inc.	73
* General Gas Light Co.	79	* Stampings, Inc.	125
* Griffiths Co., The E. F.	145	* Sunray Oil Corp.	136
* Harper-Wyman Co.	—	* Superior Tank & Construction Co.	75
* Harrisburg Steel Corp.	111	* Superior Valve & Fittings Co.	126
* Hartwell Co.	149	* Tesco, Inc.	143
* Heatbath Appliances, Inc.	146	* Thomas Truck & Caster Co.	—
* Helco Products Corp.	134	* Trageser Copper Works, Inc.	—
* Holly Manufacturing Co.	9	* Union Carbide & Carbon Corp., The	—
* International Metal Hose Co.	137	* Linde Air Products Co. Unit.	83
* J & S Carburetor Co.	101	* United Petroleum Gas Co.	17
* Leggett Co., S. H.	147	* Viking Pump Co.	141
* Linde Air Products Co., The Unit of Union Carbide & Carbon Corp.	83	* Warren Petroleum Corp.	First Cover
* LPG Credit Corp.	71	* Weatherhead Co., The	4, 5
* LPG Insurance Underwriters	147	* Weldit, Inc.	138
* Lubbock Machine Co., Inc.	67	* Wilcolator Co., The	93
		* William Wallace Co.	105
		* Wood Manufacturing Co., A. R.	76
		* Wood Co., John	—

★ These advertisers carry additional information on their products in the 1950 Butane-Propane News Catalog.

